



May 14, 2013

The Honorable Sally Jewell
Secretary
U.S. Department of the Interior
1849 C Street, N.W.
Washington, D.C. 20240

The Honorable Rebecca M. Blank
Acting Secretary
U.S. Department of Commerce
1401 Constitution Ave., N.W.
Washington, DC 20230

RE: Petition for Rulemaking to Define “Recovery” Under the Endangered Species Act and to Establish Recovery Planning Regulations for Threatened and Endangered Species.

Dear Secretary Jewell and Acting Secretary Blank,

The Society for Conservation Biology¹ (SCB) hereby petitions the Secretary of the Department of the Interior (DOI), through the U.S. Fish and Wildlife Service (FWS), and the Secretary of the Department of Commerce (DOC), through the National Oceanic and Atmospheric Administration (NOAA) (collectively the “Services”), under the Administrative Procedure Act,² and the DOI’s regulations at 43 C.F.R. Part 14, to promulgate new regulations within Title 50 of the Code of Federal Regulations for the recovery of threatened and endangered species. Specifically, we request that the Services establish regulations that scientifically define “recovery” and set minimum regulatory requirements for the recovery planning process. These changes will allow the Services to better achieve the core goal of the Endangered Species Act, the recovery of listed species.

Conserving threatened and endangered species is not limited to merely preventing any particular species’ extinction. Under the ESA, the conservation of listed species includes the much more ambitious goal—“the process by which listed species *and their ecosystems are restored and their future is safeguarded* to the point that protections under the ESA are no longer needed.”³ This petition will demonstrate that both the legislative history of the ESA and the statutory text demonstrate that recovery to be more ambitious than merely preventing biological extinction. **In fact, the ESA is designed to prevent any portion of the United States from becoming biologically depauperate.** The ESA ensures not only that biological diversity is maintained, but

¹ SCB is an international professional organization whose mission is to advance the science and practice of conserving the Earth’s biological diversity, support dissemination of conservation science, and increase the application of science to management and policy. The Society’s 5,000 members include resource managers, educators, students, government and private conservation workers in over 140 countries.

² The Administrative Procedure Act provides that “[e]ach agency shall give an interested person the right to petition for the issuance, amendment, or repeal of a rule.” 5 U.S.C. § 553(e).

³ RECOVERY GUIDANCE at 1.1-1.



also that species richness is maintained throughout the United States. The mere preservation of stable, relict populations of any species that formerly inhabited a much wider historic range does not meet the ESA's overarching purpose and goals, i.e. "to provide a means whereby ecosystems upon which endangered species and threatened species depend may be conserved."⁴ SCB acknowledges that the ESA does not require a species be restored to 100% of its lost historic range or 100% of its historic abundance. But the Act does require that species be recovered to such levels as they are meaningful components of the ecosystems that they once inhabited.

Despite the paramount importance of recovery in the Endangered Species Act, for nearly forty years, the Services have operated without any regulatory structure for recovery planning and recovery implementation. In 1990, the Fish and Wildlife Service published minimal, non-binding, recovery planning guidelines,⁵ and the National Marine Fisheries Service followed suit in 1992 with its own guidelines.⁶ These guidelines were consolidated into a joint *Endangered and Threatened Species Recovery Planning Guidance* ("Recovery Guidance") in 2004.⁷ These documents have helped to clarify the procedural and logistic requirements of recovery planning, include the development of site-specific management actions for the conservation and survival of the species, objective and measurable criteria that would result in a determination that a species is no longer threatened or endangered, and estimates of the time required and the costs to carry out those measures needed to achieve the species' recovery.⁸ However, these documents have failed to establish substantive, science-based, parameters to guide the recovery process. Most critically, the concept of what "recovery" means remains poorly defined.

The result of failing to provide a rigorous definition of recovery has led to predictable results. Recovery criteria setting forth population abundances, geographic range, and acceptable threat risk-levels⁹ at which a species should be considered recovered and removed from the list of threatened and endangered species vary widely across species and taxonomic groups.¹⁰ The most prominent example of inconsistency in defining what it means for a species to be recovered is to compare the recovery of the Bald Eagle (*Haliaeetus leucocephalus*), which achieved near pre-European colonization population levels before being considered recovered,¹¹ and the gray wolf

⁴ 16 U.S.C. § 1531(b).

⁵ USFWS. 1990. *Policy and Guidelines for Planning and Coordinating Recovery of Endangered and Threatened Species*. Available at: http://www.fws.gov/filedownloads/ftp_DJCase/endangered/pdfs/Recovery/90guide.pdf

⁶ NMFS. 1992. *Recovery Planning Guidelines*. 8pp.

⁷ USFWS & NMFS. 2004. *Endangered and Threatened Species Recovery Planning Guidance* (hereafter "RECOVERY GUIDANCE"). Available at: http://www.fws.gov/endangered/esa-library/pdf/NMFS-FWS_Recovery_Planning_Guidance.pdf

⁸ 16 U.S.C. § 1533(f)(1)(B).

⁹ Wilhere, G. F. 2012. *Inadvertent Advocacy*, *Conservation Biology* 26:39-46; *See also*, Carroll, C., et al. 2012. *Scientific Integrity in Recovery Planning and Risk Assessment: Comment on Wilhere*. *Conservation Biology* 26:743-745.

¹⁰ Neel, M.C., et al. 2012. *By the Numbers: How is Recovery Defined by the US Endangered Species Act?* *BioScience* 62: 646-657.

¹¹ Scott, J.M., J.L. Rachlow, R.T. Lackey. 2008. *The Science-Policy Interface: What is an Appropriate Role for Professional Societies*. *BioScience* 58:865-869 at 866; *See also*, Buehler, D.A. 2000. *Bald Eagle (Haliaeetus leucocephalus)*, *The Birds of North America*.



(*Canis lupus*), which the Fish and Wildlife Service has repeatedly proposed for delisting¹² despite the gray wolf's continued absence from over 80% of its historic range in the United States.

Equally problematic, the failure to establish regulatory sideboards on recovery planning has led to damaging political interference in recovery planning efforts. Such political interference, while rare, is well documented. Most recently, the Department of Interior's Inspector General provided a comprehensive report on the actions of former Deputy Assistant Secretary Julie MacDonald, whose actions set back the recovery planning process for the Northern Spotted Owl (*Strix occidentalis caurina*) many years, wasted taxpayer dollars and, more importantly, harmed a threatened species by setting back any recovery activity.¹³ More broadly, the Inspector General noted "an enormous policy void" regarding the FWS's implementation of the ESA, which appeared to the Inspector General to be "an area of intentional failure to clarify, in order to maximize the agenda *du jour*." The Inspector General concluded that the FWS "owes the public a fair and consistent application of rules in making its ESA decisions."¹⁴ For these reasons, the Department of Interior and Department of Commerce owe the public clear, science-based regulations to guide the recovery planning process. Central to achieving this concept is a definition of recovery that is based on the best available science, and a recovery planning process that puts the science-based needs of the species first and foremost.

Developing regulations to guide recovery planning will require an honest reappraisal of other aspects of ESA implementation, including the Section 7 consultation process, the designation of critical habitat, and species' status reviews under Section 4, all of which should function in an integrated fashion to further the goal of recovery. For example, while the ESA requires the Services to conduct a status review of each listed species every five years, these status reviews rarely, if ever, occur for the overwhelming majority of species. Because status reviews have occurred only rarely, the Services seldom adjust the conservation status of a species from threatened to endangered, or vice-versa, without receiving a petition from an interested party. This has real consequences because the ESA grants differing levels of statutory protection for a "threatened species" compared to an "endangered species."¹⁵

Yet the Services, and especially the FWS, treat "threatened" species and "endangered" species as functionally equivalent. SCB believes that threatened species are fundamentally different from endangered species in the type of risk they face compared to endangered species, which are by definition threatened with extinction. It should therefore follow that recovery should treat

¹² Proposal To Reclassify and Remove the Gray Wolf From the List of Endangered and Threatened Wildlife in Portions of the Conterminous United States; Proposal To Establish Three Special Regulations for Threatened Gray Wolves. 65 Fed. Reg. 43,450 (July 13, 2000); Designating the Northern Rocky Mountain Population of Gray Wolf as a Distinct Population Segment and Removing This Distinct Population Segment From the Federal List of Endangered and Threatened Wildlife, 72 Fed. Reg. 6,106 (Feb. 7, 2007); Proposed Rule To Revise the List of Endangered and Threatened Wildlife for the Gray Wolf (*Canis lupus*) in the Eastern United States, Initiation of Status Reviews for the Gray Wolf and for the Eastern Wolf (*Canis lycaon*), 76 Fed. Reg. 26,086 (May 5, 2011).

¹³ U.S. Dept. of Interior Inspector General. 2008. *Report of Investigation: The Endangered Species Act and the Conflict between Science and Policy*. Available at: http://www.doi.gov/oig/reports/upload/Endangered%20Species%20FINAL%20REDACTED5%20w_TOC_encryption.pdf

¹⁴ *Id.* at ii-iii

¹⁵ Compare, 16 U.S.C. § 1538(a)(1) (describing the prohibited acts for endangered species), with 16 U.S.C. § 1538(a)(2) (describing the prohibited acts for threatened species).



threatened and endangered species differently, and that recovery planning should follow the structure and logic of the ESA itself. Endangered species should first be downlisted to threatened status prior to any action to delist that species. If a threatened species' conservation status is not improving, then it should be uplisted to endangered status, and its recovery plan should be revised to recognize that existing conservation measures have been inadequate to arrest the decline of the species. This "step-down" process recognizes that there are different statutory prohibitions under the ESA depending on whether a species is listed as "threatened" or "endangered."¹⁶ By recognizing the real difference between threatened and endangered, the Services would be better able to develop objective criteria for when a species should be reclassified from threatened to endangered, or vice-versa, based on the risk of extinction for that species. And, the Services would then be able to develop a different set of criteria for determining when a threatened species has fully recovered, or when it might need to be re-listed under the ESA.

Acknowledging and addressing the current failings in the recovery planning process will not eliminate the Services' discretion to address the unique circumstances each species face on the road to recovery. However, implementing recovery planning regulations will increase the transparency and consistency of recovery planning across species and taxonomic groups. These types of recommendations are not new. In fact, SCB has had a long history of involvement in efforts to improve the Services' recovery planning activities. Between 1999 and 2002, SCB coordinated with the Fish and Wildlife Service on a large-scale review of 181 recovery plans.¹⁷ The study identified a number of strengths and weaknesses of those recovery plans, and provided recommendations to improve the recovery planning process.¹⁸ In particular, the SCB review identified several areas where recovery planning required improvement:

- Explicit addressing and monitoring of threats
- Monitoring of species trends, threats, implementation effectiveness and recovery criteria
- Internal consistency of plans (i.e. connecting biological information to recovery criteria/actions)
- Inclusion of new science and theories
- Prioritization of species plans for implementation and revision
- Addressing of needs for critical habitat management where designated

Some of these recommendations were incorporated into the Services' 2004 joint Recovery Guidance. However, many recommendations still have yet to be addressed, and new concerns regarding the Services' practices with recovery planning have come to light.¹⁹ Most alarmingly, the recovery planning process continues to be vulnerable to improper political pressures that can lead to delays in the planning process and weaker recovery objectives for threatened and endangered species.²⁰ This petition represents an attempt to address some of the most pressing deficiencies in the current recovery planning process that continue to put biodiversity at risk.

¹⁶ 16 U.S.C. §§ 1532(6) & (20).

¹⁷ Boersma, P. D. 1999. *SCB to conduct national review of recovery plans*. SCB Newsletter 6:12 (Feb. 1999).

¹⁸ RECOVERY GUIDANCE at 1.0-2.

¹⁹ *Friends of Blackwater v. Salazar*, No. 1:09-cv-02122 (D.C. Cir. Aug. 17, 2012).

²⁰ Public Employees for Environmental Responsibility. 2012. *Complaint of Scientific and Scholarly Misconduct*. Available at: http://peer.org/docs/fws/6_7_12_Mex-wolf_Scientific_Integrity_Complaint.pdf



SCB's petition is divided into four parts. Part One provides a brief introduction to how the ESA addresses the concept of recovery and recovery planning. Part Two provides a recommendation for a scientific definition of "recovery," as well as additional definitions of related terms to fully effectuate a new definition of recovery. Part Three provides recommendations for a regulatory framework to guide all recovery planning efforts. Finally, because recovery planning is distinct from other implementation areas of the ESA, for which the Services have already promulgated regulations, SCB proposes a new Part to Title 50 of the Code of Federal Regulations specifically to address recovery. Part Four suggests that a new regulatory section, *Part 425—Recovery and Recovery Planning*, and provides comprehensive language for such a proposal.

I. Recovery of Threatened and Endangered Species Under the Endangered Species Act.

In order to understand when any species should be considered "recovered" under the ESA, it is critical to make clear three key features of the ESA: (1) the scientific foundation for all listing decisions made by the Services, (2) what it means for a species to be listed as "threatened" versus "endangered" under the ESA, and (3) what it means to be threatened or endangered within a significant portion of a species' range.

First, the ESA requires that every listing decision be made "solely on the basis of the best scientific and commercial data available."²¹ As the Supreme Court explained, the "obvious purpose" for which Congress included this best-data-available standard is "to ensure that the *ESA not be implemented haphazardly*, on the basis of speculation or surmise."²² Just as the decision to list a species under the ESA must be based solely on the best available science, the decision to delist a species, thereby lifting the statutory protections granted it under the Act, must also be based on the best available science.²³ Because a decision to delist must be made based on the best available science, it therefore follows that the recovery criteria used to achieve recovery of listed species must also be based on the best available science. Otherwise, the recovery process is at risk of being implemented by the Services in a haphazard or arbitrary fashion.

Second, there are substantial differences between the statutory term "endangered species," which means "any species which is in danger of extinction throughout all or a significant portion of its range," and the term "threatened species," which means "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."²⁴ An endangered species faces a different type of risk than a threatened species, namely the risk of extinction in the *present*. A threatened species is *not* at risk of extinction currently, but instead is at risk of becoming endangered at some point in the foreseeable future. This approach is somewhat different from the IUCN classification system which defines "critically endangered," "endangered," "vulnerable," based on different degrees of a species *current* extinction risk.²⁵ Under

²¹ 16 U.S.C. § 1533(b)(1)(A).

²² *Bennett v. Spear*, 520 U.S. 154, 176 (1997) (emphasis added).

²³ 16 U.S.C. § 1533(c)(2).

²⁴ 16 U.S.C. § 1532(6) & (20).

²⁵ IUCN (International Union for Conservation of Nature). 2001. IUCN Red List categories and criteria. Version 3.1. IUCN, Gland, Switzerland.



the ESA, threatened status is a more nebulous concept temporally when it comes to quantifying the threats a species faces. All species on the planet are at some risk of extinction, even if that risk is only infinitesimal small (due to a highly unlikely stochastic event). Recent scientific literature has highlighted the difficulty in delineating the line between threatened and recovered as primarily a policy choice about acceptable extinction risk (Wilhere 2012).

Establishing whether a species is “threatened” based on extinction risk or population abundance faces substantial difficulties because a species’ abundance is not necessarily linked to its current conservation status, although it is generally true that species with greater ’ abundance generally have a lower extinction risk. Thus, SCB recommends a different approach to delineating “threatened” and “recovered” based primarily on the species’ ability to perform its historic role or function within an ecosystem throughout its range. As explained in Part II.C, SCB proposes that the Services develop quantitative criteria to assess when extinction risk is low enough to downlist a species from “endangered” to “threatened,” and to develop qualitative criteria that assess a species’ function/role in its ecosystem to assess recovery to then reclassify a “threatened” species as “recovered.”

Third, it is critical to recognize that the ESA provides the Services the authority to protect a species that is threatened or endangered throughout all of its range *and* the ESA provides the Services the authority to protect a species that is threatened or endangered throughout a significant portion of its range. The ability to protect a species that is endangered throughout all of its range allows the Services to address the risks of a species becoming *extinct*. But, the separate authority to protect a species that is threatened or endangered in a significant portion of its range allows the Services to address the risks of a species being *extirpated* from a portion of its range, *irrespective of and independent of* whether this loss in range would lead to the extinction of a species. Prior to 1973, the Endangered Species Preservation Act of 1966 and the Endangered Species Conservation Act of 1969 only allowed the Services to protect species threatened throughout their range globally.²⁶ In 1973, Congress added the “significant portion of its range” (hereafter “SPR”) language to allow the Services to take action *prior* to a species being “*threatened* with worldwide extinction.”²⁷ The reason that Congress wanted to prevent extirpation is evidenced by the first section of the ESA, which states that threatened and endangered species “are of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people.”²⁸ When a species is extirpated from a portion range, it is no longer of value to the United States or its people within that portion. As the Environmental Impact Statement, which accompanied nearly identical legislation a year prior to the passage of the ESA stated, these expanded definitions of threatened and endangered species would:

provide the Secretary with the authority to protect a population unique to some portion of the country without regard to its taxonomic status, or a population that is now endangered over a large portion of its range even if the population inhabiting

²⁶ See Endangered Species Preservation Act of 1966, Public Law No. 89-669; Endangered Species Conservation Act of 1969, Public Law No. 91-135.

²⁷ H.R. Rep. No. 93-412 (July 27, 1973) (emphasis added).

²⁸ 16 U.S.C. § 1531(a)(3)



that portion of the range is not recognized as a distinct subspecies from a *more abundant population occurring elsewhere*.²⁹

There are clear, historical instances where the Services, and in particular the FWS, have protected species under the ESA in portions of their range even though those species were much more abundant elsewhere. In 1975, the FWS listed the grizzly bear (*Ursus arctos horribilus*) throughout the conterminous 48 states because “the range of the grizzly bear, which at one time was much of the western United States, is now confined to isolated regions in Montana, Idaho, and Wyoming.”³⁰ The Bald Eagle (*Haliaeetus leucocephalus*) was listed as endangered throughout the conterminous 48 States except in Washington, Oregon, Minnesota, Wisconsin, and Michigan, where the eagle was listed as threatened.³¹ In 1978, the gray wolf (*Canis lupus*) was listed as endangered throughout the conterminous 48 States.³² Finally, in 1992 the FWS listed the Marbled Murrelet (*Brachyramphus marmoratus*) as threatened in California, Oregon, and Washington.³³ For each of these four species, the FWS afforded the protections of the ESA because each of them were threatened with extirpation, or had been extirpated, from a significant portion of their historic range. While the rationale for listing these four species was not fully explained in these early listing determinations, it is clear that the FWS considered other factors beyond global viability when it listed each of these species due to threats in a significant portion of its range because none of them were at risk of global extinction. Instead, these species were protected in order to accomplish other goals, namely the restoration and recovery of these species to their historic range.

If a species can be listed as threatened or endangered because it is at risk of extirpation or has been extirpated from a significant portion of its range, **then it logically follows that recovery cannot occur until a species is secure throughout all significant portions of its range.** Conversely, in order to be considered “recovered,” a species can at most be in danger of extinction now or in the foreseeable future in only those portions of its range that are no significant.³⁴ This broader, and more protective, concept of recovery is consistent with the primary purpose of the ESA, “to provide a means whereby the *ecosystems* upon which endangered species and threatened species depend may be conserved” because a species’ presence across all significant portions of its range is more likely to be fulfilling its ecological function within the biological community.³⁵ Thus, defining recovery to include both considerations of biological viability and geographic representation across a species range results in a much greater likelihood that a species will be of sufficient abundance that it preserves the ecosystems upon which it depends. An exclusive focus on the biological extinction risk when evaluating species’ recovery will be more likely to result in the

²⁹ Environmental Impact Statement accompanying H.R. 13111, 92nd Congress (1972) (emphasis added).

³⁰ 40 Fed. Reg. 5, Jan. 2, 1975

³¹ 41 Fed. Reg. 28,525, Jul 12, 1976. This listing action superseded the earlier protection of the bald eagle under the Endangered Species Preservation Act of 1966, in which the bald eagle was listed an endangered species throughout its historic range, *see* 32 Fed. Reg. 4,001 (Mar. 11, 1967).

³² 43 Fed. Reg. 9,607, Mar. 9, 1978. This designation superseded the FWS’s earlier decisions to list as endangered the putative timber wolf subspecies (*Canis lupus lycaon*) in 1967 and the putative Northern Rocky Mountain wolf (*Canis lupus irremotus*) in 1973 while leaving all other wolf populations unprotected.

³³ *Determination of Threatened Status for the Washington, Oregon, and California Population of the Marbled Murrelet*, 57 Fed. Reg. 45,328 (Oct. 1, 1992).

³⁴ Vucetich, J. A., M. P. Nelson, and M. K. Phillips. 2006. *The normative dimension and legal meaning of endangered and recovery in the U.S. Endangered Species Act*. Conservation Biology 20:1383–1390.

³⁵ 16 U.S.C. § 1531(b) (emphasis added)



development of recovery criteria with fundamental shortcomings, including the possibility of discounting a species' role in its ecosystems.

To demonstrate why a sole focus on biological extinction risk in the context of recovery is inadequate, one can look at the current understanding of “keystone” species in maintaining ecosystem structure and processes.³⁶ When a keystone species disappears, the entire ecosystem is disrupted, causing cascading changes in the ecosystem that can have far ranging negative consequences.³⁷ The sea otter, an endangered species on the west coast, is a classic “keystone” species because its disappearance from an ecosystem radically changes the structure of kelp forests in the ocean as urchin populations expand uncontrollably where sea otters are absent.³⁸ While there is a general understanding of the consequences of sea otter extirpation from a particular region, determining what sea otter recovery looks like is much more complicated. As noted by Soulé et al. (2005), “the ecologically effective population for sea otters, though regionally variable, is always much larger than minimum viable population sizes based on demography, and in some instances is near the environmental carrying capacity.” Thus, sea otter recovery criteria should be based on the sea otter *density required to prevent kelp deforestation*, which will in turn depend on, and vary geographically with, the influence of sea otter predators, competitors, and prey.³⁹

Similarly, recovery of the gray wolf should not focus exclusively on minimum viable populations of gray wolves in a particular area. Rather, following Soulé et al. (2005), recovery should focus on the role wolves play in the control and regulation of ungulate populations. Where wolves and other predators are absent, populations of white-tailed deer (*Odocoileus virginianus*), Elk (*Cervus canadensis*), and moose (*Alces alces*) have increased in numbers, resulting in widespread degradation of forests and other ecosystems, and the decline of many species of plants favored by ungulates. Thus gauging the ecological effectiveness of wolves requires an analysis of riparian and understory forest plant recruitment. For example, aspens and cottonwood recruitment in Yellowstone National Park could serve as an indicator of wolves reaching population levels at which they are ecologically effective. As Soulé et. al (2005) observed, other factors affect wolves' ecologically effective population density, including whether humans contribute to the suppression of ungulate numbers, where wolves coexist with other large carnivores, and where deep winter snow or periodically severe storms facilitate capture of prey.

Although the ecological role of these “keystone” species is relatively easy to understand, Soulé, et. al also noted that conservation biologists should avoid the dichotomy between keystone species and non-keystone species. Instead, all species should be assessed based on their

³⁶ Paine, R.T. 1966. *Food web complexity and species diversity*. American Naturalist 100: 65–75.

³⁷ Michael E. Soulé, et. al., *Strongly Interacting Species: Conservation Policy, Management, and Ethics*, 55 BioScience 168 (Feb. 2005). See, e.g., Robbins, K., 2007. *Missing the Link: The Importance of Keeping Ecosystems Intact and What the Endangered Species Act Suggests We Do About It*, 37 Env'tl. L. 573, 585–92; L. Scott Mills, M.E. Soulé, and D.F. Doak, *The Keystone-Species Concept in Ecology and Conservation*, BioScience, Vol. 43, No. 4 (Apr., 1993), pp. 219-224.

³⁸ *Listing the Southwest Alaska Distinct Population Segment of the Northern Sea Otter (Enhydra lutris kenyoni) as Threatened*, 68 Fed. Reg. 6,600 (Feb. 11, 2004); *Determination that the Southern Sea Otter is a Threatened Species*, 42 Fed. Reg. 2,965 (Jan. 14, 1977).

³⁹ SCB notes that while this may result in different numerical criteria in different portions of the sea otter's range, the use of recovery units allows the Services to establish fine-scale recovery parameters.



“interactivity” with other species, and that management, including recovery, should focus on preventing population densities from falling below thresholds that reduce a species’ ecological effectiveness. There are many types of ecosystem interactions that can be measured and assessed by modern scientific techniques, including habitat enrichment, mutualisms, predation, and competition. Beavers and prairie dogs are “ecological engineers” that significantly modify their habitat in ways that increase local species diversity.⁴⁰ Whitebark pine (*Pinus albicaulus*) and Clark’s nutcracker (*Nucifraga columbiana*) are mutualist species, in which the Clark’s nutcracker is dependent on the seeds of the whitebark pine, and the pine depends on the nutcracker for the dispersal of its seeds into caches. These whitebark pine seed caches are a major food source for both small vertebrates and threatened grizzly bears (*Ursus arctos*) in the Greater Yellowstone ecosystem.⁴¹

If the recovery of threatened and endangered species is to achieve the larger goal of “preserving the ecosystems upon which threatened and endangered species depend,” considerations of a species’ ecologically effective population densities and its effectiveness in meeting this role must be considered as part of the meaning of recovery.⁴² Ensuring that each species is fully recovered at its greatest spatial extent, i.e. throughout all significant portions of its range, helps to achieve the objective of maintaining ecologically effective population sizes of threatened and endangered species. Full geographical recovery and ecosystem role are critical in making recovery meaningful and are the central objectives of this petition. SCB hopes that this petition will assist the Services in accomplishing this task.

II. The Services Must Define “Recovery” in a Rigorous Manner to Ensure that Species Recovery is Occurs Consistently Across Taxa.

A. The Current Regulatory Definition of Recovery is Inadequate

The current regulations implementing the ESA only address recovery in the most basic manner. The regulations that guide the Section 7 consultation process state that recovery means “improvement in the status of listed species to the point at which listing is no longer appropriate under the criteria set out in section 4(a)(1) of the Act.”⁴³ And, the regulations that guide the process for the listing process state that a species may be delisted “on the basis of recovery only if the best scientific and commercial data available indicate that it is no longer endangered or threatened.”⁴⁴ Both of these regulations are legally accurate, but neither helps to explain what recovery means because both definitions are mere tautologies. In essence, both regulations state that recovery occurs for a species when recovery occurs for that species.

The Services offers a slightly more robust definition of “recovery” in their Recovery Guidance, which states: “Recovery is the process by which listed species *and their ecosystems are*

⁴⁰ J Jones C.G., J.H. Lawton, and M. Shachak . 1994. *Organisms as ecosystem engineers*. *Oikos* 69:373–386.

⁴¹ Mattson D.J., B.M. Blanchard, and R.R. Knight. 1992. *Yellowstone grizzly bear mortality, human habitation, and whitebark pine seed crops*. *Journal of Wildlife Management* 56: 432–442.

⁴² Soulé M.E., et. at. 2003. *Ecological effectiveness: Conservation goals for interactive species*. *Conservation Biology* 17:1238–1250.

⁴³ 50 C.F.R. § 402.02

⁴⁴ 50 C.F.R. § 424.11(d)(2).



restored and their future is safeguarded to the point that protections under the ESA are no longer needed.”⁴⁵ This statement acknowledges that recovery *includes* the restoration of the ecosystem upon which a threatened or endangered species depends, and is not limited to reducing risk of biological extinction below a certain threshold. However, the Guidance offers no additional science-based criteria for defining recovery, instead only acknowledging that “Recovery is a serious, complicated endeavor that we need to think about carefully, implement wholeheartedly, and reassess constantly.”

SCB believes that it is long-past time for the Services to reassess their understanding of what recovery means because the consequences of not providing regulations on recovery are now very well documented. Since the 1992 SCB-led review of recovery planning, which raised many areas of concern in recovery planning, additional research has shown that recovery planning is biologically inadequate. Tear et al. (1993) reviewed 314 recovery plans and found that for those plans with population size data were available, 28 percent of those plans set recovery goals “at or below the existing population size at the time the plan was written.”⁴⁶ Setting recovery goals below existing population sizes is “counterintuitive to the concept of recovery,” and the authors concluded that:

recovery goals have often been set that risk extinction rather than ensure survival. Crucial to the success of the recovery process is that recovery goals depict biologically defensible estimates that will ensure population viability....Such discrepancies suggest that political, social, or economic considerations may have been operating that reduced recovery goals to that they were below what might have been set if they had been developed strictly on biologically based estimates.⁴⁷

A 2001 review by Elphick et al. found that population targets for delisting varied significantly among endangered bird species, but that this variation in recovery targets was not based on biological factors specific to each endangered species.⁴⁸ Instead, recovery targets were more related to the circumstances under which species were listed and the recovery plans were written explains the variation in recovery goals, possibly based on the “recovery team’s perception of how much the population can be increased given available resources.”⁴⁹ More recently, Neel et al. (2012) conducted a review of the 1,173 species with recovery plans, finding that many of these patterns in recovery planning continue to occur with the end result that recovery criteria for many listed species are too low to ensure long-term persistence.⁵⁰ In particular, recovery criteria for numbers of individuals and numbers of populations required for recovery were lower than levels suggested for maintaining ecological viability or evolutionary potential. For 144 species, recovery

⁴⁵ RECOVERY GUIDANCE at 1.1-1.

⁴⁶ Tear, T.H., et al. 1993. *Status and Prospects for Success of the Endangered Species Act: A Look at Recovery Plans*. *Science* 262:976-977.

⁴⁷ *Id.*

⁴⁸ Elphick C.S., et al. 2001. *Correlates of Population Recovery Goals in Endangered Birds*. *Conservation Biology* 15:1285-1291.

⁴⁹ *Id.*

⁵⁰ Neel, M. C., et al. 2012. *By the Numbers: How is Recovery Defined by the U.S. Endangered Species Act?* *BioScience* 62:646-657; see also, Leidner, A. K. and M. C. Neel. 2011. *Taxonomic and Geographic Patterns of Decline for Threatened and Endangered Species in the United States*. *Conservation Biology* 25:716-725



objectives were set at lower number of populations than when the recovery plan was written, suggesting that further declines could occur on the way to species “recovery.” In general, recovery plans require “clearer articulation of the logic for choosing particular abundances and of the relationships between those abundances and threats.”

In general, recovery criteria are set at higher levels for threatened species than the levels set for endangered species. For example, Neel et al. note that “threatened species had more populations and individuals at listing and plan writing, and their recovery required twice the number of individuals that the *endangered* species’ recovery required.”⁵¹ In addition, recovery plans continue to lack sufficient consideration of the historic numbers of populations in setting recovery criteria. If a species is only at a small percentage of its original abundance, it is difficult to understand how a species would not still be considered at risk of extinction even if recovery criteria are met. Without considering a species’ historic baseline abundance in defining recovery for that species, the Services risk accepting a shifting baseline of abundance without fully acknowledging or understanding the consequences and risks of lifting the protections of the ESA when the species remains at population levels that leave it at continued risk of extinction.⁵² For the reasons described above, it is critical that the Services finally adopt a meaningful definition of recovery to guide the recovery planning process.

B. The Services Should Adopt a Rigorous Definition of Recovery

As explained above, SCB recommends that the Services adopt an entire new section within their implementing regulations for the ESA to address recovery and recovery planning. However, the single most critical reform needed is to redefine recovery. This must be done in two locations, in the existing consultation regulations and in SCB’s proposed Part 425 Recovery and Recovery Planning regulations. Therefore, SCB recommends the following substantive changes to the existing ESA’s implementing regulations:

1. 50 C.F.R. § 402.02⁵³ Should be Revised to Read as Follows:

Recovery means the improvement in the status of a listed species such that—

- (1) the species is of sufficient abundance, measured by numbers of individuals, numbers of populations, range extent, and habitat availability, that it possesses the necessary representation, redundancy, and resiliency to ensure the species’ long-term persistence, and to ensure that the species continues to perform its ecological role in each significant portion of its range; and
- (2) the species is no longer at risk of becoming endangered within the foreseeable future in any significant portion of its range due to (A) the present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational,

⁵¹ Neel, M. C., et al. 2012. *By the Numbers: How is Recovery Defined by the U.S. Endangered Species Act?* BioScience 62:646-657.

⁵² Pauly, Daniel (1995) *Anecdotes and the shifting baseline syndrome of fisheries*. Trends in Ecology and Evolution, 10:430.

⁵³ The current regulation at 50 C.F.R. § 402.02 states: *Recovery* means improvement in the status of listed species to the point at which listing is no longer appropriate under the criteria set out in section 4(a)(1) of the Act.



scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence.

2. In Addition to the Above Proposed Definition of “Recovery,” the Following Additional Definitions Should be Included in Part 425 of Title 50 of the Code of Federal Regulations:

Ecological role means the biological functions a species performs that helps to prevent ecosystem degradation or conserves the ecosystems upon which it depends.

Representation means the variation found in a species to ensure that its adaptive capabilities across all significant portions of its range are conserved.

Redundancy means possessing multiple populations distributed across all significant portions of its range with a margin of safety to withstand catastrophic events.

Resiliency means the characteristics that allow a species to recover from periodic disturbance.

Significant portion of its range means each portion of a species’ historic range that is within a separate and defined ecoregion.

Range means:

- (1) The current extent of occurrence of the species,
- (2) The species’ former extent of occurrence insofar as the species’ former range extent still contains biologically suitable habitat or can be feasibly restored, and
- (3) The projected extent of occurrence which will likely include biologically suitable habitat for the species within the foreseeable future.

C. Explanation of Proposed Definitions.

SCB’s proposed definition of recovery focuses on three key elements: (1) threats to listed species (2) population abundance of species, and (3) the proper geographic scale for assessing such threats. SCB also recommends additional definitions to provide context for our proposed definition of recovery, including a basic definition of a species’ ecological role, significant portion of a species’ range, and representation, redundancy, and resiliency (commonly known as the “Three-Rs”).

1. “Significant Portion of its Range” is the Proper Geographic Scale for Assessing Recovery.

SCB recognizes that determining the proper geographic scale for assessing recovery is not an easy task, especially for wide-ranging species. Indeed, the Services themselves acknowledge in the “Emerging Ideas and Issues” Section of the Recovery Guidance that addressing significant portions of a species’ range is one of the more difficult issues that the Services will need to address



moving forward with recovery planning.⁵⁴ Nevertheless, simply because addressing “significant portion of its range” is difficult does not mean that science-based parameters should not be established to guide this assessment. First, it is certainly true that a species need not be restored to 100% of its historic range in order to be recovered. However, because the ESA requires recovery in all significant portions of a species’ range, determining which portions are significant is the most critical step in order to determine what recovery means for a given species. SCB believes that one of the most scientifically-defensible approaches to determining which portions of a species range are significant is to evaluate a species’ range in the context of its occupancy of biogeographic ecoregions. Recovery can then be properly assessed by evaluating the alleviation of threats within an ecoregion such that the species no longer qualifies it as threatened or endangered.

This ecoregion-focused evaluation also must take into account the total range of a particular species. For example, a species with a global range of over a million square kilometers, like the gray wolf, which suffers a reduction in range of 30%, will likely have a very different conservation status than a range-restricted species that suffers a similar percentage decline in range, like the Mount Graham red squirrel (*Tamiasciurus hudsonicus grahamensis*), which has a global range of less than 100 km² and is found only on the top of a single mountain in Arizona.⁵⁵ For the Mount Graham red squirrel, virtually every portion of its range is important to the survival of that species. And indeed, the loss of some of its habitat to development remains one of the main threats to the recovery of this species. For these range-restricted species, the inquiry as to whether a species has recovered throughout its range or has recovered in a significant portion of its range *is the same*.

Decline in range extent underlies the rationale used in the IUCN and NatureServe species conservation status assessments. Under the IUCN Red List Criteria, a species qualifies as critically endangered when its range (“extent of occurrence”) is less than 100 km²; a species qualifies as “endangered” when its range is less than 5,000 km²; and “vulnerable” when its range is less than 20,000 km².⁵⁶ Similar range values are used in the NatureServe’s assessment process for the “critically imperiled,” “imperiled,” and “vulnerable” categories.⁵⁷ Thus, if the Services are considering the best available science for range-restricted species, then they would likely conclude that until the threats to such species are alleviated throughout its range, the species remains threatened or endangered.

However, as one moves along the spectrum of range size from very small to very large, a species’ total range becomes sufficiently large that extirpation of a species from an area no longer *necessarily* triggers a finding of endangerment. The IUCN Red List and NatureServe utilize a 20,000 km² global range extent threshold as a cutoff for finding that a species is intrinsically “vulnerable” to extinction if a range contraction occurs. Past this size threshold, the loss of range extent criterion no longer provides justification for assessing such species as vulnerable. This does not mean that a species with a large range cannot be classified as endangered or threatened; rather it

⁵⁴ RECOVERY GUIDANCE at 7.0-1

⁵⁵ *Determination of Endangered Status for Mount Graham Red Squirrel*, 52 Fed. Reg. 20,994 June 3, 1987.

⁵⁶ IUCN Red List at 16-23 (assuming that the species does in fact face at least one other threat such as habitat fragmentation or a continued decline/extreme fluctuations in population size, area of occupancy, or mature individual).

⁵⁷ Faber-Langendoen, D. et al. 2009. *NatureServe conservation status assessments: methodology for assigning ranks*. NatureServe.



means that other threats (such as reductions in population abundance, percentage population decline over three generations, quantitative PVA assessment, etc.) must also be present to result in such a status assessment—range decline *by itself* is simply no longer a necessary factor.

If the ESA only focused on extinction, one could argue that so long as the threats to a species had been abated, and as long as a species' range had not contracted to the point that the loss of additional range *itself* was a threat to the species (e.g., somewhere around the IUCN 20,000km² level), then a species could be considered recovered. In other words, as long as stable, relict populations exist, the ESA is not implicated and recovery need not go any further. However, because the ESA does *not* focus merely on extinction, the statute obligates the Services to determine which extirpations are of sufficient magnitude to trigger protection under the ESA. SCB believes that the proper geographic context for assessing such extirpations is whether these extirpations have eliminated a species from a distinct ecoregion that it historically occupied.

2. Ecoregions Provide a Science-based Approach for Defining a Significant Portion of a Species' Range in Recovery.

SCB recommends defining the term *significant portion of its range* to mean “each portion of a species' historic range that represents a separate and defined ecoregion.” SCB believes that the most biologically coherent approach for assessing extirpations in the context of recovery is to focus on a species' presence within ecoregion units because it is at this approximate geographic scale that recovery in a “significant portion of its range” takes on independent meaning from recovery “throughout its range” for a species. SCB recognizes that there are several different ways of defining ecoregions, including Bailey's Ecoregional Divisions,⁵⁸ the Environmental Protection Agency's Level I, II, and III ecoregions,⁵⁹ and The Nature Conservancy's ecoregions,⁶⁰ among others. SCB believes that the Services should retain flexibility to determine which ecoregion scheme is the most appropriate for a given species, as has occurred in several recent listings by the NMFS described below. Such an approach retains agency flexibility, and does not simplify recovery planning to an exact numeric threshold based on square kilometers or percentage of overall range, approaches that would likely be rejected by the courts.⁶¹ Focusing recovery on geographic representation within an ecoregion also avoids the pitfall of requiring recovery in potentially insignificant portions of a species' range, a concern that was raised most famously in a 1979 report to Congress by the General Accounting Office (GAO) that the “significant portion of its range” language might lead to the listing (and thereby recovery) of “squirrels in a specific city park,” even if squirrels were more abundant elsewhere.⁶²

SCB recommends that if a listed species' global range encompasses two or more ecoregions, full recovery only occurs when the species has recovered in each and every ecoregion that comprise its historic range. For those range-restricted species whose entire historic global range is located

⁵⁸ Bailey's Ecoregions. See <http://nationalatlas.gov/mld/ecoregp.html>

⁵⁹ EPA Ecoregions. See <http://www.epa.gov/wed/pages/ecoregions.htm>

⁶⁰ The Nature Conservancy Ecoregions. See http://gis.tnc.org/data/MapbookWebsite/map_page.php?map_id=9

⁶¹ See *Defenders of Wildlife v. Norton*, 258 F.3d 1136 (9th Cir. 2001) (rejecting a “predetermined percentage of habitat or range” to qualify a species for listing).

⁶² Government Accountability Office. 1979. *Endangered Species – A Controversial Issue Needing Resolution* 52-58 (GAO Rep. CED 79-65, 1979).



within one ecoregion, the recovery inquiry for such species' entire range would be substantively the same as each significant portion of its range.⁶³ If a species' global range was primarily outside the United States, but a portion of the range existed in the United States, the recovery would be required within both the U.S. portion of the range (corresponding to its presence within U.S. ecoregions), and beyond the U.S. portion of its range.

There would be several benefits to considering recovery in the context of species' ecoregional distribution. First, over the last two decades, mapped classifications of patterns in biodiversity have become prominent tools for conservation planning, and the mapping of these landscape-level ecological communities is occurring with greater and greater scientific rigor. In 2001, Olson proposed a classification system that divided up the terrestrial land masses of the planet into 867 ecoregions representing distinct biotic assemblages.⁶⁴ Additionally, ecoregions have been identified for freshwater systems⁶⁵ and marine systems around the world.⁶⁶ Similar efforts have already occurred within United States land management agencies. In 1996, the FWS adopted a formal policy to utilize an ecosystem approach for the conservation of fish and wildlife.⁶⁷ Based on the U.S. Geological Survey's Hydrologic Unit Map, the FWS divided the United States into 53 "ecosystem units" based on major watersheds, vegetation cover types, physiography (physical geography), optimum size, and the amount of land area that could be effectively addressed given management and resource constraints. Today, the FWS state-level and regional offices all incorporate ecosystem management by considering the conservation needs within the ecosystem units within their respective management spheres.

Most importantly, recent listing decisions already use ecoregion-based analyses to determine the conservation status of imperiled species. For example, in a 12-Month finding to list the upper Missouri River DPS of arctic grayling (*Thymallus arcticus*), the FWS recognized that these grayling "occur in a temperate ecoregion distinct from all other Arctic grayling populations worldwide, which occur in Arctic or sub-Arctic ecoregions dominated by Arctic flora and fauna." FWS noted that:

Occupancy of Missouri River Arctic grayling in a temperate ecoregion is significant for two primary reasons. First, an ecoregion represents a suite of factors (climate, vegetation, landform) influencing, or potentially influencing, the evolution of species within that ecoregion. Since Missouri River Arctic grayling have existed for thousands of years in an ecoregion quite different from the majority of the taxon, they have likely developed adaptations during these evolutionary timescales that distinguish them from the rest of the taxon, even if we have yet to conduct the proper studies to measure these adaptations. Second, the

⁶³ SCB notes that the authority to list a subspecies or distinct population segment would still allow for finer scale listings where a species' global range falls entirely within an ecoregion. This would allow for finer scale recovery objectives where applicable. See petition, *infra* at III.C.1

⁶⁴ Olson, D. M., et al. 2001. *Terrestrial Ecoregions of the World: A New Map of Life on Earth*. *BioScience* 51:933-938.

⁶⁵ Abell, R., et al. 2008. *Freshwater Ecoregions of the World: A New Map of Biogeographic Units for Freshwater Biodiversity Conservation*. *BioScience* 58:403-414.

⁶⁶ Spalding, M.D., et al. 2007. *Marine Ecoregions of the World: A Bioregionalization of Coastal and Shelf Areas*. *BioScience* 57:573-583.

⁶⁷ USFWS. 1996. Fish and Wildlife Manual, Chapter 52, April 19, 1996.



occurrence of Missouri River Arctic grayling in a unique ecoregion helps reduce the risk of species-level extinction, as the different regions may respond differently to environmental change.⁶⁸

Likewise, NMFS has considering species distributions within ecoregions in its listing decisions. In a 12-Month Finding on a petition to delist the Coho salmon (*Oncorhynchus kisutch*) south of San Francisco Bay, NMFS reviewed the threats to this Evolutionarily Significant Unit of salmon. In the review, NMFS noted that several creeks had similar characteristics to the Coast Range ecoregion, which is found further north. Because of these similarities, NMFS actually extended the range of the salmon based on ecoregion similarities, rather than delisting the species.⁶⁹ And, with the recent listing of the Atlantic sturgeon (*Acipenser oxyrinchus*), NMFS divided the Atlantic sturgeon into five distinct population segments (DPS), based largely on terrestrial and marine ecoregion boundaries.⁷⁰ SCB supports the designation of DPS units based on ecoregional boundaries, but notes that for invertebrates and plants, the significant portion of its range language provides an alternative listing option where a species is threatened or endangered only within a portion of its range.⁷¹ These examples show that the Services have considered, as a matter of common practice, a species' presence in an ecoregion as an important factor in the listing evaluation process.⁷²

SCB is encouraged by the Services' increasing use of ecoregion-based analyses in listing decisions. Just as these listing determinations represent best practice, SCB believes that recovery focused on a species' conservation status within an ecoregion is also scientifically warranted.⁷³ Under this approach for recovery, determinations as to whether it is appropriate to downlist or delist a species would be based on ecologically-defined boundaries. Such an approach would also be the

⁶⁸ *12-Month Finding to List the Upper Missouri River Distinct Population Segment of Arctic Grayling as Endangered or Threatened*, 75 Fed. Reg. 54,708 (Sept. 8, 2010).

⁶⁹ *12-Month Finding on a Petition to Delist Coho Salmon South of San Francisco Bay*, 76 Fed. Reg. 6,383 (Feb. 4, 2011).

⁷⁰ *Final Listing Determination for Two Distinct Population Segments of Atlantic Sturgeon (Acipenser oxyrinchus oxyrinchus) in the Southeast*, 77 Fed. Reg. 5,914 (Feb. 6, 2012)

⁷¹ SCB's earlier comments on SPR note that one possible solution to reconcile the Services' DPS policy and SPR is to view the two as functionally equivalent for vertebrates that face threats within distinct ecoregional areas. See Comments by the Society for Conservation Biology, North America Section and Marine Section, on the Draft Policy on Interpretation of the Phrase "Significant Portion of Its Range" in the Endangered Species Act's Definitions of "Endangered Species" and "Threatened Species." Available at:

http://www.conbio.org/images/content_policy/SCB_Comments_on_SPR_Policy_3_8_2012.pdf

⁷² See also, *12-Month Finding on a Petition to List the Pygmy Rabbit (Brachylagus idahoensis) as Endangered or Threatened*, 75 Fed. Reg. 60,516, Sept. 30, 2010; *90-Day Finding on a Petition to List a Distinct Population Segment of the Fisher in Its United States Northern Rocky Mountain Range as Endangered or Threatened with Critical Habitat*, 75 Fed. Reg. 19,925, Apr. 16, 2010. The FWS has used similar reasoning for the Greater Sage-Grouse (*Centrocercus urophasianus*), 75 Fed. Reg. 13,910, Mar. 23, 2010 and Yellow-billed Cuckoo (*Coccyzus americanus*) 66 Fed. Reg. 38,611, July 25, 2001. NMFS listing decisions incorporating ecoregional considerations include Roundtail Chub (*Gila robusta*), 74 Fed. Reg. 32,352, Jul. 7, 2009; and Southern DPS of Eulachon (*Thaleichthys pacificus*), 74 Fed. Reg. 10,857, Mar. 13, 2009.

⁷³ SCB notes that this practice is also consistent with the Services' *Interagency Cooperative Policy for the Ecosystem Approach to the Endangered Species Act*. 59 Fed. Reg. 34,274, Jul. 1, 1994. This policy states that "Species will be conserved best not by a species-by-species approach but by an ecosystem conservation strategy that transcends individual species. The future for endangered and threatened species will be determined by how well the agencies integrate ecosystem conservation with the growing need for resource use."



most consistent with how the Services have addressed the recovery of wide-ranging species in the past. SCB acknowledges that basing recovery on ecoregion boundaries is, in part, a normative policy decision, and that there may be other ways the Services could determine which portions of a species' range are significant. However, SCB believes that this approach is the most consistent with principles of conservation biology, the structure of the ESA, relevant case law,⁷⁴ and recent best practice of the Services. Therefore, the next step in ecoregion-based recovery is to determine how to assess a species based on its conservation status in the constituent portions that comprise the species' global range.

3. Species Abundance and Threat-based Assessments.

As discussed above, setting recovery objectives primarily in terms of population abundance or in the context of a population viability analysis has been a noted area of weakness in recovery planning in the past, with recovery targets being set at very low population levels, often at or below the population level at the time of listing. The Recovery Guidance notes this tension: “merely increasing a species' numbers, range and abundance does not ensure its long term health and sustainability; only by alleviating threats can lasting recovery be achieved.”⁷⁵ The Recovery Guidance therefore recommends that recovery criteria achieve the following:

- Address the biodiversity principles of representation, resiliency and redundancy.
- Address threats to the species in terms of Section 4(a)(1) of the ESA.
- Include population numbers, sizes, trends and distribution, population structure or recruitment rates, specific habitat conditions, and minimum time frames for any of the above.
- Be measurable and objective.

SCB agrees with this general approach with one important addition—*recovery criteria, and therefore recovery itself, must achieve these goals at a geographic scale that recovers a species in all significant portions of its historic range.* If these criteria are set at the geographic scale of ecoregion, then recovery is more likely to occur throughout all significant portions of the species historic range, and not result in “recovery” at a level that is inadequate to meet the larger purposes of the ESA. Moreover, consideration of the proper geographic scale could avoid the well-documented result where recovery plans for different threatened and endangered species contain vastly different levels of acceptable extinction risk to be considered as recovered. While SCB acknowledges that all listed threatened and endangered species, are to some extent, unique in the challenges they face regarding recovery, consistency in setting recovery objectives provides needed transparency and clarity in the recovery planning process. Most importantly, ensures that science-based recovery criteria are established even for species that may present economic or political controversy with respect to recovery. In the long run, robust recovery for all listed species provides benefits to the environment and the ecosystems upon which threatened and endangered species depend by ensuring that all biological components of an ecosystem are maintained at viable levels. SCB believes this definition of recovery provides the necessary sideboards—while retaining agency

⁷⁴ *Defenders of Wildlife v. Salazar*, 729 F. Supp. 2d 1207 (D. Mont. 2010); see also, *WildEarth Guardians v. Salazar*, 2010 U.S. Dist. LEXIS 105253 (D. Ariz. Sept. 30, 2010).

⁷⁵ RECOVERY GUIDANCE at 1.3-1.



flexibility to address the unique situation for each listed species—to result in consistent, transparent, and scientifically defensible recovery criteria.

First, just as the Services' Guidance suggests that recovery criteria address representation, resiliency and redundancy, our proposed definition of recovery requires the Services to assess these characteristics in each significant portion of a species' historic range. Preserving historic representation means that recovery efforts target the characteristics needed to conserve the genetic diversity of a particular species. Recovery must consider a species' historic range because an exclusive focus on the current status of the species at the present moment has significant negative consequences for biodiversity.⁷⁶ Ignoring historic range leads to the “shifting-baseline” problem, wherein recovery targets are set at far too low levels to ensure a species' long-term viability and continued ecological function in an ecosystem.⁷⁷

Ignoring historic range is problematic from a practical perspective because it is difficult to determine at what point in time a species' range-extent no longer qualifies as “current” range. Inadequate funding has resulted in a lengthy delay in listing of species which are ‘warranted’ for listing but precluded by other priorities.⁷⁸ As a result, there are still over 200 species awaiting listing under the ESA, with some of these species waiting over 10 years to be protected under the Act.⁷⁹ At what point should the Services consider current range, when a species was first petitioned for listing or when it was finally protected under the ESA, decades later? Even in situations where delays are minimal, it is still unclear exactly where the line would be between “current” and “historic” range. Current range could potentially be set at the time of the initial petition, or upon the completion of the 90-day finding, 12-month finding, draft rulemaking, or final rulemaking stage. None of these possible alternatives would represent the best available science, because the scientific literatures makes clear that historic range is an integral component of the conservation and restoration of endangered species. SCB acknowledges that defining historic range can be challenging, and that it likely does not make sense to consider historic range back to the Pleistocene era. However, where historic records exist, and there is sufficient knowledge about past range-extent and past habitat conditions, historic range should be considered in determining geographic representation for the purpose of recovery planning.

With respect to resiliency and redundancy, both of these are equally served by considerations of historic range in recovery planning. Ensuring resiliency allows a species to withstand demographic and environmental variation that occurs randomly in the environment. Redundancy recognizes the precautionary principle, by ensuring that there are sufficient numbers of populations to provide a margin of safety to ensure that full representation and resiliency is preserved. If recovery occurs in portions of a species' historic range that are not currently occupied,

⁷⁶ Papworth S.K., et al. 2008. *Evidence for shifting baseline syndrome in conservation*. Conservation Letters 2:93-100; see also, Pauly, D. 1995 *Anecdotes and the shifting baseline syndrome of fisheries*. Trends in Ecology and Evolution, 10:430.

⁷⁷ Waples, R. S., et al. 2008. *Legal Viability, Societal Values, and SPOIR: Response to D'Elia et al.* Conservation Biology 22:1075–1077.

⁷⁸ Harris, J.B.C., et al. 2011. *Conserving Imperiled Species: A Comparison of the IUCN Red List and U.S. Endangered Species Act*. Conservation Letters, 5:64-72.

⁷⁹ *Review of Native Species That Are Candidates for Listing as Endangered or Threatened; Annual Notice of Findings on Resubmitted Petitions; Annual Description of Progress on Listing Actions*, 77 Fed. Reg. 69,994 (Nov. 21, 2012).



additional populations will likely need to be established, which in turn will likely increase both resiliency and redundancy. Considerations of the “three Rs,” redundancy, resiliency, and representation, has been widely recommended in the scientific literature,⁸⁰ and is commonly used by the Services in listing decisions and recovery planning. SCB’s proposed regulatory text institutionalizes this approach to recovery of listed species.

Second, our proposed definition requires that the Services assess threats to the species in every significant portion of its historic range. Conducting an assessment of a species’ conservation status within ecoregional sub-units of its range is no less and no more complicated than conducting such an assessment at the scale of its total range. In fact, this type of assessment is routinely conducted for species within the United States by NatureServe, which contemplates multiple scales for assessing a species’ conservation status. The NatureServe assessment provides a modified set of criteria for assessing a species within a defined spatial unit, at a smaller scale than its global range. By doing assessments in this manner, the Services would still be considering viability of the species, but at the *geographic scale of ecoregions*. As explained below in Section III.A.1, by setting the recovery inquiry at the scale of a each significant portion of a species historic range, it is more likely that recovery will achieve that will reflect a species historic distribution and abundance throughout the landscape.

4. Considering a Species’ Ecological Role in an Ecosystem

Additionally, for recovery to be biologically meaningful, a threatened or endangered species must be performing its historic ecological role or function within the ecosystems it occupies. The purpose of the ESA is “to provide a means whereby the *ecosystems* upon which endangered species and threatened species depend may be conserved.”⁸¹ Conserving an ecosystem requires the species that compose such systems to continue to perform their ecological role, otherwise the ecosystem is more prone to unravel. As discussed above, a species’ ecological role should be assessed based on its ecological effectiveness. Recovery must ensure that a species reaches an ecologically effective density that prevents undesired changes in a defined ecological setting.⁸² SCB acknowledges that gauging or estimating an effective density will be contextual, depending on many factors external to the species itself. However, Soulé et al did provide a set of characteristics that can help guide this inquiry including:

- Does the absence or decrease in abundance of the species lead directly or indirectly to a reduction in local species diversity?
- Does the absence, decrease in abundance, or range contraction of the species directly or indirectly reduce reproduction or recruitment of other species?
- Does the absence or decrease in abundance of the species lead directly or indirectly to a change in habitat structure or composition of ecosystems?

⁸⁰ Tear, T.H., et. al. 2005. *How Much is Enough? The Recurrent Problem of Setting Measurable Objectives in Conservation*. BioScience 55:835-849.

⁸¹ 16 U.S.C. § 1531(b) (*emphasis added*)

⁸² Soulé, M. E., et al. 2005. *Strongly interacting species: conservation policy, management, and ethics*. BioScience 55:168–176.



- Does the absence or decrease in abundance of the species lead directly or indirectly to a change in productivity or nutrient dynamics in or between ecosystems?
- Does the absence or decrease in abundance of the species change an important ecological process in the system?
- Does the absence or decrease in abundance of the species reduce the resilience of the system to disturbances such as fire, drought, flood, or exotic species?

Soulé et al. argue that ecological effectiveness and interactivity can be assessed quantitatively. However, SCB recognizes that this may not always be feasible for every threatened and endangered species given resource-constraints. Thus, as will be discussed below in Part III of this petition, delisting criteria that focus on ecological role or ecological effectiveness can be qualitative in nature. Qualitative recovery criteria can still be objective and measurable, just as the Clean Water Act allows for objective and measurable qualitative water quality standards.⁸³ If the Services feel that they are not able to develop quantitative criteria to assess the ecological role of a threatened species, then there is a greater danger they will omit such criteria altogether. An exclusive focus on the biological extinction risk when evaluating species' recovery will be more likely to result in the development of recovery criteria with fundamental shortcomings.

Although perhaps difficult to define, the concept of assessing a species' ecological role is not without precedent. Rather, a similar criteria requiring the consideration of a species' ecological role is contained within Article IV of the Convention on International Trade in Endangered Species (CITES), which requires each member Nation to monitor exports of Appendix II species to "maintain that species throughout its range at a level consistent with its role in the ecosystems in which it occurs and well above the level at which the species might become eligible for inclusion in Appendix I."⁸⁴ SCB believes that there is a logical symmetry for including a species' ecological role in a definition of recovery. Both CITES and the ESA, which implements CITES in the United States, recognize that species face differing degrees of extinction risk. Appendix I species under CITES include those at greatest risk of extinction, whereas Appendix II species are at a lower degree of risk of extinction. Similarly, endangered species under the ESA are presently at risk of extinction, whereas threatened species are at risk of becoming endangered at some point in the foreseeable future.

Just as CITES recognizes that Appendix II species are those with a higher population abundance (and therefore lower risk) and that these species should function within their ecosystems and perform their ecological role, potential recovery regulations should similarly recognize that threatened species should generally be at a higher population abundance than species listed as endangered (although there may be some circumstances where the severity of threats and rate of decline warrant listing a species as endangered even when it is currently at relatively large population size). Thus, considering a species' ecological role would be logical and represent

⁸³ 33 U.S.C. § 1313. See also, *PUD No. 1 of Jefferson County v. Washington Department of Ecology*, 114 S.Ct. 1900 (1994) (Washington may require permit meet narrative water quality standards); and *Northwest Environmental Advocates v. City of Portland*, 59 F.3d 979 (9th Cir. 1995) (City of Portland liable for violations of narrative water quality standards even though such standards were not translated into numerical limitations in a National Pollution Discharge Elimination System permit).

⁸⁴ Convention on International Trade in Endangered Species, Article IV, Section 3, 27 U.S.T. 1087.



biologically appropriate criteria for assessing a species' recovery from threatened status. SCB recognizes that this category will vary from species to species, since every species performs different and unique roles in an ecosystem. And, SCB also recognizes that the Services will not have sufficient capacity to determine every ecological role that a species plays. However, that should not be a practical impediment for describing a subset of the ecological roles a particular species performs in an ecosystem and providing qualitative criteria to determine when a species has reached sufficient abundance and geographic distribution to meet its recovery objectives.

5. Definition of Range.

Just as the Services have never provided an operational definition of “recovery,” the Services have also never defined the term “range” under the ESA. As a result, both in listing decisions and in recovery planning, the Services have inconsistently addressed the historic range of threatened and endangered species. A prominent example of this inconsistent application entails comparing the recovery of American alligators, bald eagles, peregrine falcons, and gray wolves. FWS defined recovery for the three bird species to include distribution throughout their historic range, whereas FWS has repeatedly proposed to delist gray wolves despite the species' continued extirpation over vast areas of their historic range.⁸⁵ For recovery to be consistent with the purposes underlying the ESA, the Services must consider a species' past, present, and potential future range. Therefore, SCB is providing a definition of range that includes (1) the current range extent of a species occupies, (2) the historic range extent of a species insofar as biologically suitable habitat the species previously occupied still persists or which can be feasibly restored, and (3) the projected future range extent in which biologically suitable for the species will become available within the foreseeable future. Recovery would be required in a species' current and historic range, both in the context of its global range and in context of each significant portion of its range. This does not mean that a species must necessarily be recovered to 100% of its past historical distribution. However, recovery would require that a species be restored to those areas within its historic range if *suitable habitat* remains.⁸⁶

This approach is consistent with both the text of the ESA and Congressional intent regarding the Act. First, there are multiple provisions in the ESA that address unoccupied habitat and recovery in lost historic range. The definition of “conservation” contemplates translocations of species to new areas.⁸⁷ The Services have the authority to designate unoccupied areas as critical habitat, which logically implies that these areas represent lost historic range. Section 10(j) establishes a procedure specifically designed to return a species to areas of historic range that are no longer occupied. It is also true that recovery need not occur in 100% of a species historic range. As noted by the Congress in the 1973 Committee Report:

⁸⁵ See 65 Fed. Reg. 43,450 (July 13, 2000); 72 Fed. Reg. 6,106 (Feb. 7, 2007); 76 Fed. Reg. 26,086 (May 5, 2011).

⁸⁶ Vucetich, J. A., M. P. Nelson, and M. K. Phillips. 2006. *The normative dimension and legal meaning of endangered and recovery in the U.S. Endangered Species Act*. Conservation Biology 20:1383–1390; Carroll, C., et al. 2006. *Defining recovery goals and strategies for endangered species: the wolf as a case study*. BioScience 56:25–37; Carroll, C., et al. 2010. *Geography and recovery under the U. S. Endangered Species Act*. Conservation Biology 24:395–403.

⁸⁷ 16 U.S.C. § 1532(3).



Clearly it is beyond our capability to acquire all the habitat which is important to those species of plants and animals which are endangered today, without at the *same time dismantling our civilization*. On the other hand, there are certain areas which are critical which can and should be set aside.⁸⁸

SCB's proposed regulation defines "range" meets the goal of consistently requiring recovery in a species' historic range, without requiring the dismantling of civilization. SCB offers a case study of how SCB's proposed recovery definition would function by examining the recovery of the gray wolf. Under SCB's proposed approach, each ecoregion the gray wolf historically occupied would represent a significant portion of the species' range, and recovery would be required in each ecoregion prior to the species being delisted. This approach would be roughly similar to the FWS's original 1976 listing for the gray wolf, but would focus recovery at the ecoregion scale. This approach would not necessarily preclude delisting of the gray wolf in stages. Under the existing Distinct Population Segment (DPS) policy,⁸⁹ the FWS could designate each ecoregion as a separate DPS unit, and downlist/delist the wolf as recovery occurred in each DPS.⁹⁰ Recovery criteria for delisting within each ecoregion would be based on the best available science following the five statutory listing factors under the ESA. FWS would eventually need to restore the wolf in each DPS to the point at which it is no longer at risk of *extirpation* from that DPS unit. But, it is important to note that this approach would not require the gray wolf to reclaim 100% of its historic range; instead, this approach only requires sufficient recovery to the extent that the species is biologically viable within each ecoregion.

This approach for wide-ranging species would provide significant biological benefits for the species at issue because geographic distribution may be an effective surrogate of genetic viability."⁹¹ Protection across a species' geographic range at the ecosystem-unit scale should in most cases provide for sufficient clinal diversity, which may in turn result in sufficient genetic diversity for a given threatened or endangered species. Thus, an additional benefit of properly considering recovery at the ecoregion level would be that representation would therefore meet the other objective of genetic resiliency.⁹²

III. Minimum Regulatory Standards are Needed to Ensure that Recovery Planning is Based on the Best Available Science during the Recovery Planning Process.

Having developed a more detailed, scientific approach to defining recovery, SCB recommends establishing additional regulatory sideboards to guide the recovery planning process. These suggested regulations are not intended to supplant the Services' existing Recovery Guidance. Rather, these regulations are designed to ensure that the recovery planning process is not abused

⁸⁸ H.R. Rep. No. 93-412, at 4 (1973).

⁸⁹ USFWS & NMFS. 1996. *Policy Regarding the Recognition of Distinct Vertebrate Population*, 61 Fed. Reg. 4,722 (Feb. 7, 1996).

⁹⁰ SCB believes that the existing DPS policy contains sufficient flexibility to undertake this approach (similar to the way that NMFS is already conducting listings), and would present a less controversial way forward for addressing recovery of wide-ranging species.

⁹¹ See, Carroll (2010) *supra* footnote 80: "general knowledge of genetic viability does not allow one to infer the level of genetic diversity necessary for viability of a specific population"

⁹² *Id.*



and that the recovery outcomes for threatened and endangered species are not influenced by improper political or economic concerns. In general, the existing Recovery Guidance would only need minor, albeit substantively significant, changes if the Services were to adopt these regulatory changes. The suggested changes below will ensure that best practices are incorporated in all cases in recovery planning activities. First, SCB provides distinct definitions for downlisting criteria (from endangered to threatened status) and delisting criteria (from threatened status to recovered). Second, SCB has proposed regulations for the development of recovery outlines and recovery plans. Third, SCB has proposed regulations that put time limits on some recovery planning activities to help limit improper political interference in the development of recovery plans. Fourth, SCB has proposed regulations to integrate recovery planning with the periodic status reviews required under Section 4(e) and the Section 7 consultation process. Finally, SCB recommends additional regulations for post-delisting monitoring and the use of the Services’ emergency listing authority to protect recovered species that, after delisting, face new threats to recovered status.

A. Recovery Planning Requires Separate Criteria for Downlisting Species Versus Delisting Species.

SCB believes that if recovery planning is going to be more consistent, transparent, and scientifically defensible, then the Service must clearly define two distinct concepts: downlisting criteria and delisting criteria. As stated above, the ESA is larger than simply an extinction-avoidance statute. Instead, one of the goals of the ESA is to preserve the ecosystems that threatened and endangered species depend upon. Just as there is a meaningful difference between “endangered species” and “threatened species,” there should be meaningful distinction between downlisting criteria and delisting criteria. The most logical structure is to recognize the linkage between the ESA’s purpose of preventing extinction, listing as endangered, and criteria to address extinction-avoidance *versus* the linkage of preserving ecosystems, listing as threatened, and criteria to address recovery.

ESA Purpose	Listing Status	Recovery Goal	Planning	Measurable Criteria
To provide a program for the conservation of threatened and endangered species	Endangered	Reducing Extinction Risk Downlisting to Threatened		Downlisting Criteria: Quantitative Alleviating extinction risk and threat abatement
To preserve ecosystems upon which threatened and endangered species depend	Threatened	Restoring Ecosystem Role/Preserving Ecosystems Delisting and Removal from List		Delisting Criteria: Qualitative Quantitative Threat abatement and ecosystem preservation

1. Downlisting Criteria

Under SCB’s approach, addressing extinction and extirpation risk should be the primary focus of criteria used to judge whether a species should be *downlisted* from endangered to



threatened status (and conversely uplisted from threatened to endangered status). Accordingly, SCB proposes a definition for “downlisting criteria” as:

objective and measurable quantitative standards, based on the best scientific and commercial data available, under which a species should be reclassified from endangered to threatened status. To the maximum extent practicable, downlisting criteria shall be achieved prior to the reclassification of a species from endangered to threatened status. Downlisting criteria shall insure that:

- (1) the listing factors under Section 4(a)(1) are being substantially abated such that the species no longer qualifies as endangered in each significant portion of its range,
- (2) the species has sufficient representation, resiliency, and redundancy in each significant portion of its range to no longer qualified as endangered,
- (3) the risk of extirpation in each significant portion of its range is less than 10% over the next 100 years, and
- (4) the risk of extinction is less than 10% over the next 100 years.

A great deal of scientific literature has examined the inconsistent and widely ranging values for extinction risk in recovery plans. As Wilhere (2012) noted, the acceptable extinction risk at the time of recovery for the `Alalā (*Corvus hawaiiensis*) is 400 times greater than the acceptable extinction risk for the Florida panther (*Puma concolor coryu*) and 4000 times the acceptable extinction the Rio Grande silvery minnow. SCB believes that this disparity in acceptable extinction risk results in part from a failure of the Services to recognize the difference between downlisting criteria and delisting criteria, and the failure to recognize the difference between endangered species and threatened species which address *different types* of risk, not *different levels* of extinction risk. Thus, for some species, often those that are politically controversial, recovery criteria are set at levels far lower than taxonomically similar species.

Under SCB’s approach, extinction risk must be abated at two scales: (1) the species’ extinction risk throughout its range, and (2) the species’ extirpation risk from each significant portion of its range. Under this approach, all species, regardless of range extent, must have a less than 10% chance of becoming extinct in order to be downlisted from endangered to threatened. For wide ranging species that occupy more than one ecoregion, the Services would have to ensure that the range-wide extinction risk is less than 10% within 100 years *and* also ensure that the species faces a less than 10% risk of extirpation within 100 years from each ecoregion. The purpose in requiring both of these criteria is to help ensure that when a species is ready to be uplisted from “endangered” to “threatened,” the species’ conservation status is roughly the same throughout its range. In other words, this approach helps guarantee that a species is put on the path towards recovery throughout its range, not just in a fraction of its historic range.

This approach loosely follows the IUCN’s approach for assessing extinction and NatureServe’s approach for assessing extirpation at smaller geographic scales than the full range of a species. SCB proposes adopting a modified metric, based on these two approaches, wherein a species is considered “endangered” if it possesses a greater than 10% risk of extinction within 100 years. In the recovery context, this would mean that a species could not be downlisted from



endangered to threatened status until its risk of extinction was less than 10% over the next 100 years.

For range-restricted species, downlisting from endangered to threatened could occur once the risk of extinction was less than 10% within 100 years, the 10% risk of extirpation criteria in a significant portion of the range would simply be subsumed by the analysis for the species range wide. For example, the Everglades Snail Kite (*Rostrhamus sociabilis plumbeus*) is range restricted to the Everglades ecoregion, and could be downlisted to threatened once its extinction risk was less than 10% over the next 100 years. In comparison, the endangered Interior Least Tern (*Sterna antillarum*) has a much larger historic range, breeding on the Rio Grande, Arkansas, Missouri, Ohio, and Mississippi Rivers in a dozen Midwestern and Western states.⁹³ Following Abell et al. 2008 classification system for freshwater ecoregions,⁹⁴ this endangered species occupies at least half a dozen distinct freshwater ecoregions, and the FWS would have a duty to ensure that the Least Tern had a less than 10% chance of extirpation from each freshwater ecoregion and less than a 10% risk of extinction prior to downlisting to threatened status.

If the FWS were to follow this approach for the Least Tern, the eventual recovery (following downlisting) of this species would look different than recovery for the Everglades Snail Kite. First, if Least Tern populations are recovered in each ecoregion to the point that there is a less than 10% risk of extirpation from each, it is highly likely that the total population will already have a lower than 10% risk of extinction as a species because the species as a whole would have redundancy throughout its range. The Least Tern would be likely have more individuals, numbers of populations, range extent, and habitat availability than the Everglades Snail Kite. In other words, recovery would not look the same for these two species because historically the Least Tern was always more abundant than the Everglades Snail Kite. Recovery would much more closely parallel the original distribution and abundance of each species prior to their declines. The Everglades Snail Kite was always restricted to the Everglades region, therefore it will always have a lower abundance and number of populations than the Least Tern, which had a far greater historic abundance. The advantage of an approach to recovery that requires considerations in each ecoregion is that it ensures that the original historic distribution of each species is preserved into the future.

Requiring that the Least Tern have a less than 10% risk of extirpation in each ecoregion prior to downlisting to threatened status does raise the possibility that the protective legal measures of the ESA are applied in situations where they are not necessarily needed because there could very well be large areas where populations of Interior Least Terns are sufficiently robust to prevent the biological extinction of this species. This is a relatively common conservation challenge that arises in the context of the conservation of wide-ranging species where conservation efforts proceed unequally. SCB has filed detailed comments on this particular issue and has provided recommendations on a path forward.⁹⁵ But in summary of those, SCB notes that the Services have

⁹³ *Interior Population of the Least Tern Determined to be Endangered*, 50 Fed. Reg. 21,784 (May 28, 1985).

⁹⁴ These ecoregions include: Upper Missouri, Middle Missouri, US Southern Plains, Ouachita Highlands, Central Prairie, Upper Mississippi, Lower Mississippi, Lower Rio Grande. Abell, R., et al. 2008. *Freshwater Ecoregions of the World: A New Map of Biogeographic Units for Freshwater Biodiversity Conservation*. *BioScience* 58:403-414.

⁹⁵ Comments by the Society for Conservation Biology, North America Section and Marine Section, on the Draft Policy on Interpretation of the Phrase "Significant Portion of Its Range" in the Endangered Species Act's Definitions of



the option to list Distinct Population Segments (DPS) of wide-ranging species based on ecoregional boundaries, an approach that has been used by NMFS in the recent past for the Atlantic Sturgeon. Listing a wide-ranging species as a number of ecoregion-based DPS units would alleviate the need to meet the 10% extirpation criteria (since by definition, an ecoregion-DPS is of the size that this criteria would not apply). And, if the conservation status of one DPS has improved, it could be downlisted or delisted while the remaining DPS units continue to receive protection under the ESA.

2. Delisting Criteria

SCB also acknowledges the inherent challenge in setting a single numeric level of extinction risk across all taxa for determining recovery. As Wilhere noted, it is hard to come up with a scientific justification why a species with a 0.0125% risk of extinction within 100 years should no longer be considered threatened, while a slightly higher risk of extinction warrants continued listing as threatened. Avoiding an arbitrary level of extinction risk in the context of recovery does mean there isn't an alternative mechanism for assessing recovery under the ESA. As discussed by Tear (1993) and Soulé et al. (2005), avoiding extinction is different than achieving recovery, and for this reason, it may indeed make more sense to focus on ecosystem dynamics than numeric extinction risk when setting criteria for recovery. Just as downlisting criteria need a regulatory definition focusing on extinction risk, "delisting criteria" also requires a distinct regulatory definition focusing on ecosystem preservation. Accordingly, SCB proposes the following definition for delisting criteria:

objective and measurable quantitative standards or qualitative standards, based on the best scientific and commercial data available that, when achieved:

- (1) indicate that a species is no longer in danger of becoming endangered within the foreseeable future based on any of the factors in Section 4(a)(1) of the Act, and
- (2) the species performs its ecological role throughout all significant portions of its range.

Delisting criteria shall be achieved prior to the delisting of such species.

This definition recognizes that achieving recovery is conceptually distinct from preventing extinction and focuses on a species ecosystem role throughout its range. As discussed above, conserving an ecosystem requires the species that compose such systems to continue to perform their ecological role, otherwise the ecosystem is more prone to unravel. Recovery must ensure that a species reaches an ecologically effective density that prevents undesired changes in a defined ecological setting (Soulé et al. 2005). SCB acknowledges that gauging or estimating an effective density will always be contextual and species specific, depending on many factors external to the species itself. And it may be the case that for some species, very little is known about that species' ecological role. However, the lack of knowledge about the role a species plays in its ecosystem should not provide a rationale for simply delisting the species. Instead, the fact that the Services do not know what ecological role a species plays suggests that the Services be precautionary and continue to protect a species until the ecological role a species plays in an ecosystem is determined

"Endangered Species" and "Threatened Species." Available at:
http://www.conbio.org/images/content_policy/SCB_Comments_on_SPR_Policy_3_8_2012.pdf



in at least a basic manner. The following list is not intended to be exhaustive, but it does provide a starting point for the Services to assess a species ecological role:

- Does the absence or decrease in abundance of the species lead directly or indirectly to a reduction in local species diversity?
- Does the absence, decrease in abundance, or range contraction of the species directly or indirectly reduce reproduction or recruitment of other species?
- Does the absence or decrease in abundance of the species lead directly or indirectly to a change in habitat structure or composition of ecosystems?
- Does the absence or decrease in abundance of the species lead directly or indirectly to a change in productivity or nutrient dynamics in or between ecosystems?
- Does the absence or decrease in abundance of the species change an important ecological process in the system?
- Does the absence or decrease in abundance of the species reduce the resilience of the system to disturbances such as fire, drought, flood, or exotic species?

3. Step-down Approach to Conservation

The Services will still have to address threat abatement when developing downlisting and delisting criteria, but the extent of the threat abatement needed will in turn depend upon the different goals of avoiding extinction versus achieving recovery. Threat abatement is generally a question of acceptable risk, and is difficult to quantify precisely. By focusing on quantitative metrics for downlisting, more consistency will occur in setting recovery criteria throughout recovery planning. Because recovery is difficult to define based solely on quantitative metrics, delisting focuses on ecosystem function in addition to threat abatement. SCB acknowledges that this approach to recovery is more complex than the Services current ad-hoc approach; however it would provide a far greater level of transparency and consistency for recovery actions across all taxa. For this approach to work, it is critical that the Services must adopt a general approach to recovery wherein species are first downlisted to threatened, based on timely status reviews, prior to removing species from the list.

Unfortunately, under the current process, recovery actions for threatened and endangered species do not follow this process. Of the approximately 15 domestic species originally listed as endangered that have been recovered under the ESA, seven of those species went from endangered status directly to recovered status.⁹⁶ Three additional endangered species, including the northern flying squirrel (*Glaucomys sabrinus fuscus*) are in the process of being delisted without being first downlisted to threatened status.⁹⁷ Such an approach is not precautionary, nor is it consistent with the

⁹⁶ The following species were listed as endangered under the ESA, and delisted without being downlisting to threatened status first: Atlantic Brown Pelican (*Pelecanus occidentalis carolinensis*), Pacific Brown Pelican (*Pelecanus occidentalis californicus*), gray whale (*Eschrichtius robustus*), Robbin's cinqfoile (*Potentilla robbinsiana*), Tennessee purple coneflower (*Echinacea tennesseensis*), Columbia white-tailed deer DPS (*Odocoileus virginianus leucurus*), and Northern Rocky Mountains Wolf DPS (*Canis lupis*). See USFWS Endangered Species Reports: http://ecos.fws.gov/tess_public/

⁹⁷ The FWS has proposed to delist the Johnston's frankenia (*Frankenia johnstonii*) and Hawaiian Hawk (*Buteo solitarius*) for delisting under the ESA. See USFWS Endangered Species Reports: http://ecos.fws.gov/tess_public/



conservation status assessment processes of the IUCN or NatureServe.⁹⁸ And as will be shown below, the decision to skip directly to downlisting often results in situations where recovery criteria are lower than a level required to ensure a species' long-term persistence in the environment.

To illustrate this problem, the recovery plan for the `Alalā (Hawaiian Crow) does not include downlisting criteria from endangered to threatened. Instead, the recovery plan states that the species will be recovered when, among other things, “peer-reviewed population models yield a probability of extinction of less than five percent within 100 years.”⁹⁹ The `Alalā is one of the most endangered birds in the world, having been driven to extinction in the wild. Reintroductions of this highly endangered species are still years or even decades into the future. Yet, the recovery plan states that the `Alalā will be removed from the endangered species list, going straight from endangered to recovered, based on a set of recovery criteria that still leave this species at a quantifiable risk of extinction. This approach to recovery is severely flawed. Rather than first downlisting the `Alalā to threatened status and re-assessing its conservation status at that point, the FWS has decided that the `Alalā could be delisted entirely. For a species that is extinct in the wild, this is a very high-risk proposition. In contrast, the NMFS's revised recovery plan for the endangered North Atlantic right whale (*Eubalaena glacialis*) states that:

the current abundance of North Atlantic right whales is an order of magnitude less than an abundance at which NMFS would even consider delisting the species, and decades of population growth likely would be required before the population could attain such an abundance. In addition, conditions related to delisting are now too distant and hypothetical to realistically develop specific criteria. Such criteria will be included in a future revision of the recovery plan well before the population is at a level when delisting becomes a reasonable decision.¹⁰⁰

Accordingly, NMFS only developed criteria to meet the intermediate goal of downlisting the Atlantic right whale from endangered to threatened. Given the demonstrably worse conservation status of the `Alalā compared to the right whale, it does not make sense, nor does it seem to fit the logic and structure of the ESA, for the FWS to develop criteria for the recovery of the species prior to developing criteria for downlisting the species.¹⁰¹ If this general approach is adopted, the development of recovery outlines and recovery plans would have more consistency, and recovery of species would be better able to meet the over-arching purposes of the ESA.

⁹⁸ See generally, IUCN (International Union for Conservation of Nature). 2001. IUCN Red List categories and criteria. Version 3.1. IUCN, Gland, Switzerland.

⁹⁹ USFWS, 2009. Revised Recovery Plan for the `Alalā (*Corvus Hawaiiensis*). Available at: http://ecos.fws.gov/docs/recovery_plan/090417.pdf

¹⁰⁰ NMFS Office of Protected Resources. 2004. Recovery Plan for the North Atlantic Right Whale (*Eubalaena glacialis*). Available at: http://www.nmfs.noaa.gov/pr/pdfs/recovery/whale_right_northatlantic.pdf

¹⁰¹ See *Southwest Center for Biological Diversity v. Babbitt*, CIV 98-372-TUC JMR (D.Ariz, 1999) (FWS decision to only develop downlisting criteria because the FWS was not yet capable of developing delisting criteria due to insufficient data).



B. Recovery Outlines Must be Based Solely on the Best Available Science.

Recovery planning takes time and resources, and the development of an effective recovery plan can occur years or even decades after a species is listed.¹⁰² However, recovery actions should not have to wait until a formal plan is adopted, and in recognition of this, the Services have adopted the practice of developing recovery outlines that serve as informal guides to recovery activities between the time a species is listed and when a final recovery plan is completed.¹⁰³ The Services describe recovery outlines as a “succinct, strategic, document used to direct the recovery effort and maintain recovery options for a species, group of species, or ecosystem, pending an approved recovery plan.”¹⁰⁴ SCB generally supports the use and development of recovery outlines and believes that these outlines can become even stronger documents with a few simple changes, focusing primarily on ensuring the recovery outlines be based solely on the best available science.

1. SCB Recommends the Following Regulatory Language for *Recovery Outline*:

- (a) The recovery outline is a succinct and strategic document, based solely on the best available science, used to direct the recovery effort and maintain recovery options for a species, group of species, or ecosystem, pending the approval of a recovery plan.
- (b) The recovery outline shall present a preliminary conservation strategy that will guide recovery actions in a systematic, cohesive way throughout the species’ range until a recovery plan is available.
- (c) For species designated as endangered, the recovery outline shall include downlisting criteria for the species based solely on the best scientific and commercial data available for the species. For species designated as threatened, the recovery outline shall include delisting criteria for the species based solely on the best scientific and commercial data available for the species.
- (d) The recovery outline shall contain:
 - (1) An assessment of the threats to the species based on the final rulemaking listing such species as threatened or endangered,
 - (2) A description of conservation actions that are urgently needed at the time a species is listed,
 - (3) A description, and where feasible an assessment of the biological consequences, of Federal agency actions that are anticipated to trigger consultations under Section 7 of the Act, and
 - (4) the recovery priority number for the species based on magnitude of threats to the species, the species’ recovery potential, and potential conflict with construction or other development projects or other forms of economic activity.

¹⁰² See generally, *Home Builders Assn of Northern California v. U.S. Fish and Wildlife Service*, 616 F.3d 983, 990 (9th Cir. 2010) (“there is no deadline for creating a recovery plan.”).

¹⁰³ RECOVERY GUIDANCE at 3.0-1.

¹⁰⁴ *Id.* at 3.1-1.



2. Explanation of Proposed Regulations.

In general, SCB approves of the Services' practice of developing recovery outlines as a means to guide recovery efforts until formal recovery plans can be developed. These regulations generally adopt the existing practices used during the development of recovery outlines with the following small changes. Most importantly, the proposed regulations make clear that recovery outlines should be based on the best available science only. Because public notice and comment are not part of the process of developing a recovery outline, it is critical that the outline be based only on scientific data, not economic or social concerns. This will help to ensure that recovery outlines do not compromise the recovery of a listed species based on improper political concerns. This is important because recovery outlines may be used for years or even decades to guide recovery efforts before a recovery plan can be completed. As discussed below, recovery outlines can and should be updated at the conclusion of each 5-year status review. These later opportunities for public comment will allow for the Services to consider whether recovery outline objectives and criteria should be revised to minimize potential conflicts with economic development. However, the original recovery outline should only focus on the biological requirements of the species to achieve recovery.

Second, the proposed regulations expressly incorporate the idea of having separate downlisting and delisting criteria. Thus, for species listed as endangered, a recovery outline should develop downlisting criteria targeted to improvement of the species to the point it can be downlisted to threatened status. For species listed as threatened, the recovery outline should develop delisting criteria targeted to achieving recovery of that species. However, for species listed as endangered, a recovery outline does not need to develop delisting criteria at that time. Given the average time it takes to recover a species under the ESA, it is highly unlikely that an endangered species' conservation status will improve so much in the first five years that it will be in a position to be downlisted from endangered to threatened status.¹⁰⁵ It would make more sense logically to defer delisting criteria until after the completion of a five year status review, which has concluded that the species should be downlisted, or in conjunction with the rulemaking process to downlist the species from endangered to threatened. The Services would not be precluded from developing delisting criteria at the time the recovery outline is developed, but would not be required to do so.

Third, SCB has included the minimum requirements for a recovery outline. These regulatory requirements recognize that threat identification and abating urgent threats are the critical first steps in the recovery process. This is consistent with the existing Recovery Guidance's approach for recovery outlines.¹⁰⁶ In addition, it is important that the recovery outline assess potential activities that may trigger the Section 7 process. Such a requirement will help to ensure that consultations inform recovery and that recovery informs consultation. Without this type of analysis, it becomes much more difficult to assess whether individual Section 7 consultations are helping to further the recovery of listed species. Finally, consistent with existing guidance as well as Section 4(f) of the ESA, the regulations require the Services to determine the recovery priority of the listed species.

¹⁰⁵ Government Accountability Office. 2006. Many Factors Affect the Length of Time to Recover Select Species. GAO-06-730, September 2006.

¹⁰⁶ RECOVERY GUIDANCE at Section 3.



C. Minimum Standards for Recovery Plans.

Section 4(f) requires that all recovery plans include “objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of this section, that the species be removed from the list” of threatened and endangered species. SCB believes that regulatory language is needed to clarify what types of criteria qualify as “objective” and “measurable.” The Services’ Recovery Guidance provides a comprehensive roadmap for the development and assembly of recovery plans, and these regulations do not supplant most of the Recovery Guidance or its general approach. Instead, the suggested regulations are designed to ensure several other key components are included in all recovery plans.

1. SCB Recommends the Following Regulatory Language for *Contents of Recovery Plans*:

- (a) *General.* The recovery plan is a comprehensive planning document that shall include:
 - (1) A description of such site-specific management actions as may be necessary to achieve the plan’s goal for the conservation and survival of the species;
 - (2) Objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of this section, that the species be removed from the list; and
 - (3) Estimates of the time required and the cost to carry out those measures needed to achieve the plan’s goal and to achieve intermediate steps toward that goal.
- (b) *Contents of Recovery Plans.* All recovery plans shall include the following:
 - (1) **Recovery Goal.** The goal of recovery planning is the recovery and delisting of threatened and endangered species. In some situations, recovery and delisting of an endangered species may be impossible or unforeseeable at the present time. Where evidence indicates that recovery is not an appropriate goal for such species, the goal of recovery planning shall be to achieve population stability and the downlisting of such species to threatened status.
 - (2) **Threat Assessment.** All recovery plans shall describe the threats to the species in terms of the five listing factors of Section 4(a)(1) of the Act. This discussion shall include the source or cause of the threats, the geographic scope, severity, and frequency of the threats, and interactions or synergists effects of two or more threats.
 - (3) **Downlisting criteria.** All recovery plans for endangered species shall include downlisting criteria, upon the meeting of which, the species shall be downlisted from endangered to threatened status.
 - (4) **Delisting criteria.** Where sufficient scientific information exists regarding the recovery of an endangered species, including such species’ ecological function in an ecosystem, a recovery plan for an endangered species shall including delisting criteria for such species. All recovery plans for threatened species shall include delisting criteria, upon the meeting of which, the species has achieved recovery and should be removed from the List of Threatened and Endangered Species.



- (5) **Recovery Units.** The Secretary may subdivide recovery goals, downlisting criteria, and delisting criteria into recovery sub-units to facilitate achieving recovery for such species.
- (6) **Recovery actions and implementation schedule.** The recovery plan shall include a list of specific recovery actions designed to address the threats to the species and achieve the recovery goal for the species, the parties responsible for carrying out such actions, the estimated duration of such actions, and estimates of the financial costs for implementation of such actions.
- (7) **Take under Section 7.** To the maximum extent practicable, the recovery plan shall provide parameters, including population viability analysis, identifying levels of acceptable incidental take that will not jeopardize the continued existence of such species.
- (c) ***Multispecies Recovery Plan.*** A multispecies recovery plan may be developed when a group of similarly situated threatened and endangered species that possess similar habitat and life-history requirements are at risk of extinction due to a common threat or set of threats, and an integrated recovery approach would benefit such species. For each species in a multispecies recovery plan, the Secretary shall identify, to the maximum extent practicable, the same components in subsection (b) of this Section. Where necessary, the Secretary shall develop an addendum to the multispecies recovery plan addressing those species that require additional implementation measures for the recovery of that species.
- (d) ***Recovery Team.*** Recovery teams shall include scientific experts on the species, for which the recovery plan is being developed. For multi-species recovery plans, the Secretary shall include scientific experts with relevant expertise on a representative group of the species included within the multi-species recovery planning team. Recovery teams may include other stakeholders, including representatives from state, local, and tribal governments, other federal management agencies, and affected stakeholder groups.

2. Explanation of Proposed Regulations.

Part (a) of the regulation above merely restates what is found in Section 4(f)(1)(B) of the ESA, and is non-controversial. Most of the remaining suggested components for *Contents of Recovery Plans* address pitfalls that have been acknowledged in the scientific literature or case-law regarding the recovery of endangered species.

a) Recovery Goal.

The above regulatory language addresses the key components needed in all recovery plans. First, all recovery plans should have an overarching goal, and normally that goal should be the recovery of threatened and endangered species. However, as the Service's Recovery Guidance notes, there are situations where recovery of a listed species is not possible, or would occur so long into the future, that it is not an appropriate goal for a plan.¹⁰⁷ SCB supports this general approach to goal-setting, and believes that it can be appropriate for a recovery plan's goal to be the stabilization of a species, not its recovery, so long as this goal is based solely on the species' conservation status.

¹⁰⁷ RECOVERY GUIDANCE at 5.1-14.



For example, the recovery of the North Atlantic right whale will simply take too many decades for the NMFS to be able to develop accurate recovery criteria at the present time. Allocating resources now to set recovery criteria may not be an efficient allocation of NMFS resources.

Likewise, in recent years, there have been discussions about the best long-term management of “conservation-reliant species” which will be unlikely to be recovered under the ESA.¹⁰⁸ SCB believes that there is a small subset of listed species that fit this description which will likely never recover because the threats to the species can never be fully abated because there are no technological/scientific remedies that can fully address the threats these species face. In particular, species that have become endangered due to invasive, non-native species that cannot be removed from the environment could fit this narrow category. However, SCB notes that it would not be appropriate for the Services to decide to not have recovery of a species as the goal of a plan based on current budgetary constraints in recovery planning, or larger economic/political concerns. SCB’s recommended language would help to ensure that when, based solely on the best available science, recovery is not realistic, that recovery planning may have a goal of population stability and downlisting to threatened status.

b) Threat Assessment, Downlisting Criteria, and Delisting Criteria

Under the ESA, whether a species is listed or not depends on an analysis of the five statutory listing factors outlined in Section 4(a)(1).¹⁰⁹ Therefore, recovery cannot occur until the threats that led to a species being protected under the ESA are fully alleviated. The Recovery Guidance requires that the Services conduct a threat assessment as part of the recovery planning process.¹¹⁰ SCB agrees with this approach and therefore proposes that regulations fully codify this strategy. This assessment will be critical when the Services then develop downlisting and delisting criteria for endangered and threatened species. For both downlisting criteria and delisting criteria, SCB proposes that criteria be designed that will address each of the five statutory factors provided by the ESA. Explicit addressing and monitoring of threats was one of the recommended improvements to the Services’ recovery planning identified in the 2002 SCB review of recovery plans. Recovery criteria that have failed to address and ameliorate the statutory threat factors that led to listing of a species have been found legally invalid by several courts. For example, failure to address threats has been This approach also follows several court decisions where recovery plans were found to be inadequate due to a failure the threats to the species. For example, in *Defenders of Wildlife v. Babbitt*,¹¹¹ the FWS had developed recovery criteria to downlist the Sonoran pronghorn (*Antilocapra americana sonoriensis*). The FWS proposed criteria to downlist the species when there were an estimated 300 adult Sonoran pronghorn in one U.S. population and a second separate population, or when 2) numbers of pronghorn were “determined to be adequate to sustain the population through time.” The Court held that these criteria were invalid because they did not address the five listing factors or even explain how meeting these criteria would address the five listing factors in the first instance.

¹⁰⁸ Goble, D.D., et. al. 2012. *Conservation-reliant Species*. *Bioscience*, 62:869-873.

¹⁰⁹ 16 U.S.C. § 1533(a)(1)

¹¹⁰ RECOVERY GUIDANCE at 5.1-9

¹¹¹ 130 F. Supp. 2d 121, 132 (D.D.C. 2001)



In addition to addressing the statutory listing factors, SCB's proposed regulatory language would establish minimal sideboards on quantitative criteria to address extinction risk for downlisting species, and qualitative criteria to address recovery for delisting species. As described above in Section III.1.A SCB proposes adopting a modified metric whereby a species is considered "endangered" if it possesses a greater than 1% risk of extinction within 100 years or a greater than 10% extirpation risk in any significant portion of its range. As a species' extinction risk falls below this 1% level, it becomes more difficult to determine when extinction risk becomes so attenuated that a species should be considered "recovered." For recovery, delisting criteria focus on threat abatement and the species' ecosystem function and role, rather than numeric extinction risk.

c) Recovery Units

Under SCB's recommended approach, the Services must expressly address recovery within each significant portion of a species' range. However, SCB also believes that the Services should have the discretion to plan for the recovery of species at spatial scales below that of each significant portion of a species range, and the proposed regulations affirm the Services' existing practice of planning at the recovery unit scale. Under the existing Recovery Guidance, a recovery unit is defined as a "geographically or otherwise identifiable and is essential to the recovery of the entire listed entity."¹¹² Recovery units are "*individually necessary* to conserve genetic robustness, demographic robustness, important life history stages, or some other feature necessary for long-term sustainability of the *entire listed entity*." Recovery units have also been found to be critical in the Section 7 consultation process, both from a substantive perspective of improving a species conservation status, but also from a procedural perspective because the identification of recovery units can make it easier to identify agency actions that might result in jeopardy.¹¹³

The Recovery Guidance also makes clear that these concerns are most relevant for wide ranging species with multiple populations, which face varying ecological pressures and conservation challenges. SCB agrees with this general approach to recovery planning and attempts to make this approach mandatory with respect to considerations of representation, resiliency, and redundancy in downlisting and delisting criteria. And to the extent that these considerations are made at the geographic scale of ecoregions, such considerations are mandatory for all species whose range encompasses at least two distinct ecoregions. Recovery units may be necessary at geographic scales smaller than the ecoregion level, and the inclusion of recovery units as a component of recovery planning recognizes this possibility and provides the Services with the option to use this tool at smaller geographic scales. The Recovery Guidance makes clear that the recovery plan explain how the recovery units for a given species are being defined and their importance to the species as a whole. The regulations provide the Services with the necessary flexibility to do so for each species on a case-by-case basis.

¹¹² RECOVERY GUIDANCE at 5.1.7.1

¹¹³ *Id.*



d) Recovery actions and implementation schedule

Section 4(f) requires that each recovery plan contain “site-specific management actions as may be necessary to achieve the plan’s goal for the conservation and survival of the species.”¹¹⁴ The Recovery Guidance attempts to meet the requirements of the ESA by requiring all recovery plans must contain a discussion of recovery actions that are required to achieve the goal of the recovery plan.¹¹⁵ Recovery actions are the specific activities that are found to be necessary to achieve the recovery plan’s goal, and the monitoring actions needed to track the effectiveness of these actions and the status of the species. Recovery actions included habitat protection, limitations on take, public outreach, research, disease control, invasive species control, captive breeding, and reintroduction or augmentation of wild populations.¹¹⁶

SCB agrees with the general approach taken by the Recovery Guidance but believes that a few basic sideboards must be established. First, recovery actions must address the threats that have led to the species’ decline. Where a recovery plan “identifies specific threats to the conservation and survival of a threatened or endangered species, but fails to recommend corrective action or explain why it is impracticable or unnecessary” to do so, the recovery plan is not legally sufficient.¹¹⁷ Second, recovery actions must identify which party is responsible for carrying out recovery actions such that there is accountability if recovery actions are not undertaken.

Finally, Section 4(f) requires that each recovery plan contain “estimates of the time required and the cost to carry out those measures needed to achieve the plan’s goal and to achieve intermediate steps towards that goal.” All recovery plans must make clear how long the Services anticipate that a particular recovery action will take to complete and the costs to complete that particular recovery action. In *Defenders of Wildlife v. Babbitt*, the Court held that the recovery plan for the Sonoran Pronghorn should have provided a time estimate for the completion of discrete recovery tasks.¹¹⁸ It is true that some recovery measures will be ongoing in nature, but where it is practicable to provide a time estimate, the ESA requires that the Services do so.

e) Take under Section 7

The direct mortality of individuals of a species and loss of habitat remain the two top drivers of extinction.¹¹⁹ Achieving recovery for most listed species in the United States will require that take of listed species and the loss of those species critical habitat be substantially abated. Yet, with the exception of a few species, the Services lack the ability to track the take of listed species or the destruction and adverse modification of critical habitat that results from Federal agency actions that undergo Section 7 consultations. In 2009, the Government Accountability Office determined that the FWS:

¹¹⁴ 16 U.S.C. § 1533(f)(1)(B)(i)

¹¹⁵ RECOVERY GUIDANCE at 5.1-19 to 5.1-20

¹¹⁶ *Id.*

¹¹⁷ *Defenders of Wildlife v. Babbitt*, 130 F. Supp. 2d 121, 132 (D.D.C. 2001).

¹¹⁸ *Id.* at 135.

¹¹⁹ Wilcove, D.S., et al. 1998. *Quantifying threats to imperiled species in the United States: Assessing the relative importance of habitat destruction, alien species, pollution, overexploitation, and disease.* *BioScience* 48(8):607-615.



lacks a systematic means of tracking the monitoring reports it requires in biological opinions and does not know the extent of compliance with these requirements....The Service also lacks a systematic method for tracking cumulative take of most listed species. Out of 497 listed species in the western states, GAO identified 3 species for which the Service has a formal, Web-based database for tracking cumulative take: northern spotted owl, marbled murrelet, and bull trout.¹²⁰

The GAO concluded that the lack of systematic means to track cumulative take for some species, and the resulting gap in knowledge of the species' status could result in the "unobserved declines in species." SCB is equally concerned about the Services' failure to be able to track cumulative take or cumulative destruction of critical habitat for listed species. SCB includes a specific regulatory approach below wherein the five-year status review becomes the principal mechanism for tracking take and adverse modification/destruction of critical habitat. However, the problem highlighted by the GAO also highlights a potentially larger problem, namely that the Services fail to offer any limitation or guidance at the onset, as to how much cumulative take and how much cumulative destruction/adverse modification of critical habitat should be permitted for a particular species, which would not jeopardize the species. Such limits on total take may not be determinable for all listed species, however when the total population of an endangered species is known, then it should be possible, using tools such as population viability analysis, to determine what aggregate level of take is permissible prior to reducing the likelihood of recovery for the species.

For example, because the North Atlantic right whale population is approximately 361 individuals, it should be possible for NMFS to determine what level of total aggregate take would threaten the survival or recovery of the species. In 2004, NMFS stated that the "loss of even a single individual may contribute to the extinction of the species."¹²¹ Between 2004 and 2008, there was an average of 2.8 right whale fatalities per year, suggesting a level of take that could impact the recovery or survival of this species.¹²² In a 2010 biological opinion regarding Atlantic lobster fisheries, NMFS concluded that "the serious injury or mortality of one right whale per year, as a result of fisheries entanglement is not likely to reduce appreciably the likelihood of both survival and recovery of the North Atlantic right whale population."¹²³ When NMFS conducted a population viability analysis (PVA) as part of that biological opinion, it concluded that, "the status quo showed an 8.6% probability of achieving a 2.0% growth rate over the next 35 years. With one less mortality per year, that probability went up to 14.7%, with one less adult female mortality per year, the probability improved to 24.6%." In other words, if existing threats continue at their current levels, the right whale has between a 75%-90% chance of either having a stable population or a population that is increasing at *less* than the stated rate of recovery in the recovery plan. SCB

¹²⁰ Government Accountability Office. 2009. *The U.S. Fish and Wildlife Service Has Incomplete Information about Effects on Listed Species from Section 7 Consultations*. GAO-09-550.

¹²¹ *Advance Notice of Proposed Rulemaking (ANPR) for Right Whale Ship Strike Reduction*, 69 Fed. Reg. 30,857, 30,858 (June 1, 2004)

¹²² *Endangered Species Act Section 7 Consultation on the Continued Implementation of Management Measures for the American Lobster Fishery [Consultation No. F/NER/2003/00956]* at 23. Oct. 29, 2010. Available at:

http://www.nero.noaa.gov/prot_res/section7/NMFS-signedBOs/LOBSTER%20BIOP%202010.pdf

¹²³ *Id.* at 119.



supports the NMFS' use of a rigorous analysis of the right whale population, however, there is no guarantee as to if or when NMFS will conduct a similar analysis in the future. Requiring a PVA, first as part of a recovery plan, and then in five-year status reviews, would provide consistency and transparency in recovery efforts, and could needed guidance on right whale conservation given the projected increasing type and numbers of threats that this species is expected to encounter into the future.

f) Multispecies Recovery Plans

The Recovery Guidance allows for the preparation of multispecies and ecosystem recovery plans.¹²⁴ There are many situations where two or more species occur in the same geographical area, share common threats, and share similar management needs. In these situations, a multispecies recovery plan or an ecosystem recovery plan may be appropriate and an efficient use of resources. Multispecies plans may also be helpful in highlighting contradictory recovery needs of two species that have overlapping ranges, as well as mechanisms to address where recovery needs conflict. SCB generally agrees that this approach to recovery planning should be available to the Services. In the definition section, "multispecies recovery plan" is defined to include both multispecies recovery plans and ecosystem recovery plans, with the same minimum requirements for each type of plan.

Because the goal of recovery implicitly including the restoration and protection of long-term ecosystem functions and ecosystem processes, SCB believes that the practice of developing such multispecies plans should be permitted, and the regulatory language provides the Services the discretion to take this approach to recovery planning. Multispecies plans may be drafted when species occupy the same habitat and the recovery requirements are similar to other listed species in the same habitat. This approach could be particularly useful when an original listing package covered more than one species that are found in the same ecosystem, such as the FWS's proposal to list 48 species found in the Alakai Swamp of Kauai.¹²⁵ Multispecies recovery planning may be appropriate when the over-riding cause of endangerment is habitat destruction or habitat degradation, and the primary means of achieving recovery is to restore ecosystem functionality. Such an approach is generally consistent with SCB's recommendation that delisting criteria focus primary on recovering a species' ecosystem role.

As the Recovery Guidance notes, there may be situations where it is still preferable to prepare a recovery plan for a single species even when the species was part of a multispecies listing package because the species has unique taxonomy, faces unique threats, or is endangered to other factors not common to the rest of the species found in a particular ecosystem.¹²⁶ And, multispecies recovery plans can still contain specific downlisting or delisting criteria that are unique to a particular species. SCB believes that the Services should retain the discretion to draft these multispecies plans where they believe it is appropriate to do so. However, one component of the SCB study of recovery plans noted that multispecies plans that were approved generally paid less

¹²⁴ RECOVERY GUIDANCE at: 2.1-2

¹²⁵ *Determination of Endangered Status for 48 Species on Kauai and Designation of Critical Habitat*, 75 Fed. Reg. 18,960 (Apr. 13, 2010).

¹²⁶ RECOVERY GUIDANCE at: 2.1-2 to 2.1-3



attention to each individual listed species compared with single species plans.¹²⁷ The SCB study found that recovery criteria for individual listed species in multiple-species plans had less robust scientific underpinning and less robust recovery objectives. And, at the time the study was completed, the conservation status for individual species that were part of multispecies recovery plans tended to be less positive than those for species with single-species recovery plans. The Recovery Guidance acknowledges this and recommends that each listed species in a multispecies recovery plan should (1) fully addressed in terms of status, threats, and biological needs and constraints, (2) contain objective, measurable recovery criteria for each species, (3) recovery actions should be consolidated to maximize effectiveness, but should indicate which species will be affected, and (4) the plan allows for each individual species to be reclassified, or delisted.¹²⁸ SCB's regulatory approach follows these general recommendations in the Recovery Guidance by requiring the Services to still incorporate downlisting and delisting criteria for each species in a multispecies recovery plan. Likewise, for ecosystem recovery plans, most recovery actions will be directed toward restoring ecosystem function and stability, the role and recovery needs of individual listed species must still be addressed. These plans must also include recovery goals, downlisting, and delisting criteria, including those linked to the threats that were the basis for listing, must be provided on a species by species basis.

g) Recovery Team Composition

Recovery plans are often drafted by recovery teams composed of persons from outside of the Services. Recovery teams can help to ensure that those with expertise regarding a listed species' biology and what would be needed to recover the species are part of the recovery planning process. Recovery teams also provide stakeholders, including state and local officials, which have an interest in the recovery the opportunity to participate in the planning and implementation of actions necessary to recover listed species. Such participation can help to develop recovery strategies that are feasible and that minimize socioeconomic impacts to local communities. As the Recovery Guidance notes, recovery teams are general used when there is greater public interest regarding the conservation of a species and for species with wider geographic ranges.¹²⁹ Recovery teams can potentially help to address and resolve controversial issues early in the recovery planning process and result in greater buy-in and credibility regarding the content of the final recovery plan.

However, the use of a recovery team can dramatically slow down the recovery planning process, and provides an opportunity where improper political interference can occur that harms the recovery prospects of listed species. As the Recovery Guidance notes, recovery teams create a "tendency for unwieldy and nonproductive meetings, especially if the team is large or includes persons who view their special interests as more important than the recovery of the species."¹³⁰ Recovery teams also can have difficulties bridging knowledge gaps among scientists, agency representatives, and other stakeholders. This leads to more complications in recovery plan development due to diverse viewpoints, greater difficulty managing the dissemination of

¹²⁷ Clark, J.A., E. Harvey. 2002. *Multi-Species Recovery Plans under the Endangered Species Act*, Ecological Applications 12:655-662.

¹²⁸ RECOVERY GUIDANCE at: 2.1-2 to 2.1-3

¹²⁹ RECOVERY GUIDANCE at: 4.2-1

¹³⁰ RECOVERY GUIDANCE at: 2.3-5



information, and the potential for misunderstandings if all team recommendations are not accepted by NMFS. Some recovery planning processes have clearly suffered from this result, most notably the revised recovery plan for the Mexican wolf, which was started in 2003, suspended in 2005, restarted in 2010, and is not expected to be completed until 2014.¹³¹

One of the most well known examples where political interference occurred in the development of a recovery plan was for the Northern Spotted Owl. In that planning process, Deputy Assistant Secretary Julie MacDonald, repeatedly involved herself in decisions regarding recovery planning for the owl. Her interference led to a draft recovery plan that was heavily criticized during the peer review process. The draft recovery plan was eventually withdrawn by the FWS, and a new recovery plan was developed, making the initial recovery plan a significant waste of FWS' limited resources. In particular, MacDonald personally rejected the FWS's initial decision to develop a recovery plan for the Northern Spotted Owl within FWS, instead requiring FWS to develop a plan using a recovery team. MacDonald personally defined the scope of work for the recovery team and crossed out "habitat protect/restoration" from the list of recovery actions that the recovery plan would cover. MacDonald also selected the recovery team, which "did not contain any scientists who were 'owl experts.'"¹³²

While it is possible that regulations could manage many of the details of the composition of the recovery team, SCB believes that a simpler approach is to provide the Services with nearly all of the discretion they currently have with respect to recovery teams, except for three key areas. First, as discussed above, if a recovery team is constituted by the Services, they must appoint at least one biologist, who is an expert on the species in question, for which the recovery plan is being developed. This ensures a minimum amount of scientific legitimacy in the recovery planning process and addresses, in part, the issues noted by the Department of Interior Inspector General's report on Julie MacDonald with respect to the Northern Spotted Owl. Second, SCB proposes regulations described below, that limit the amount of time that a recovery team has to complete a draft recovery plan. This will limit stakeholders from misusing the recovery planning process as a means to stall conservation efforts for listed species. Third, SCB's regulations call for peer review of the draft recovery plan in all instances as a safe-guard against the recovery plan being altered to improperly account for political concerns.

D. Time Limits on the Preparation of Recovery Outlines and Recovery Plans

As noted above, recovery planning takes significant time and resources, and in recognition of this fact, Congress declined to impose time-limits on when a recovery plan should be developed in relation to the time at which a species is listed as threatened or endangered.¹³³ However, this does not preclude the Services from imposing deadlines on some aspects of recovery planning to

¹³¹ Public Employees for Environmental Responsibility. 2012. *Complaint of Scientific and Scholarly Misconduct.*, Available at: http://peer.org/docs/fws/6_7_12_Mex-wolf_Scientific_Integrity_Complaint.pdf

¹³² U.S. Dept. of Interior Inspector General. 2008. *Report of Investigation: The Endangered Species Act and the Conflict between Science and Policy* at 25.

¹³³ See generally, *Home Builders Assn of Northern California v. U.S. Fish and Wildlife Service*, 616 F.3d 983, 990 (9th Cir. 2010) ("there is no deadline for creating a recovery plan.").



ensure that resources are allocated efficiently, and that improper political interference is minimized. Accordingly, SCB recommends the following regulatory language:

1. SCB Recommends the Following Regulatory Language for *Time Limits and Required Actions*:

- (a) Recovery outlines for all species found within the United States, its territorial possessions or the high seas shall be completed within 90 days of a final rule listing a species as threatened or endangered unless the Secretary finds that the development of a recovery outline will not promote the conservation of the species. For species found entirely outside the United States, its territorial possession, and the high seas, the Secretary shall, in cooperation with the U.S. Department of State, complete a recovery outline within 12 months unless the Secretary finds that the development of a recovery outline will not promote the conservation of the species.
- (b) The Secretary shall publish a Notice of Intent when it intends to initiate recovery planning for a threatened or endangered species or revise an existing recovery plan. The Secretary shall announce whether it intends to constitute a recovery team to develop or revise the recovery plan at that time. Where the Secretary decides to complete or revise a recovery plan internally within the agency, it shall produce a draft plan available for public comment within 24 months. The Secretary shall publish a final recovery plan for the species within 9 months following the close of the public comment period. Where the Service decides to constitute a recovery team to develop or revise a recovery plan, it shall do so within 120 days of the publication of the Notice of Intent. The recovery team shall provide a draft recovery plan to the Secretary for public comment within 18 months of the assembly of the recovery team. The Secretary shall publish a final recovery plan for the species within 9 months following the closing of the public comment period for such species. The Secretary may only terminate the development of a recovery plan once it publishes a Notice of Intent to initiate recovery planning for a species upon a finding that the Secretary lacks sufficient funds to complete the recovery planning process or if the species has been delisted during the intervening time. Where a recovery team is unable to complete a recovery plan within 18 months of assembly of the recovery team, the Secretary shall disband the recovery team and complete the recovery plan internally within an additional 12 months.
- (c) Peer Review. The Secretary shall conduct a peer review of the draft recovery plan during the public comment period and shall make available any peer review comments online upon submission of such comments to the Service.
- (d) The Secretary shall publish a notice in the Federal Register when it intends to initiate a status review for a threatened or endangered species. The status review shall request information regarding any new scientific or commercial information that indicate any of the following actions are warranted:
 - (1) The species should be reclassified or delisted,
 - (2) The recovery plan or recovery outline for the species should be revised, and
 - (3) Critical habitat should be designated or revised for the species.

The status review for a species shall be completed with 18 months of its commencement. The Services shall make the status review available online and at the regional field office where such review was conducted.



2. Explanation of Proposed Regulations

Under the Services' Recovery Guidance, recovery outlines should be completed within 90 days of a species being placed on the list of threatened and endangered species.¹³⁴ The proposed regulations adopt this approach and make such plans mandatory for species found within the United States, the high seas, or U.S. territorial possessions. Development of recovery outlines for foreign species could be helpful to guide conservation efforts, especially for those species that are protected under the ESA, but are not protected under CITES.¹³⁵ While the recovery of a species that is listed under both the ESA and CITES will mostly be informed by actions taken around the world via international conservation agreements, for species protected only by the ESA, the Services may need to develop a recovery plan and delisting criteria in order to determine when such species are recovered.

Where the Services find that the development of a recovery outline would be an ineffective use of resources given other conservation initiatives already working on the recovery of a newly listed foreign species or the limited resources of the Services international programs, the Services would have the option to decline completion of a recovery outline. SCB also agrees with the current recovery guidance's approach of allowing the Services to defer the completion of a recovery outline if doing so would not promote the conservation of the species. SCB expects this to be a rare circumstance, but does not believe it necessary to remove the Services' discretion to make this decision.

As stated above, the ESA places no time limits on the completion of recovery plans and several courts have recognized this limitation. However, the ESA does not preclude the Services from establishing mandatory deadlines through regulations such that recovery planning is completed in a timely process *once that process has begun*. As mentioned before, there have been several instances in which recovery planning for controversial species has been stalled or delayed substantially by political interference. The recovery planning process for the Northern Spotted Owl became mired in litigation due to political interference, and resulted in a six year process to develop a recovery plan.¹³⁶ Since 2003, the FWS has been working towards revising the 1982 recovery plan for the Mexican wolf. A final recovery plan for the Mexican wolf is now anticipated by 2014. A

¹³⁴ RECOVERY GUIDANCE at: 2.3-9

¹³⁵ See, e.g., *Listing Seven Brazilian Bird Species as Endangered Throughout Their Range*, 75 Fed. Reg. 81,794 (Dec. 28, 2010) (The Black-hooded Antwren (*Formicivora erythronotos*), Brazilian Merganser (*Mergus octosetaceus*), Cherry-throated Tanager (*Nemosia rourei*), Fringe-backed Fire-eye (*Pyriglena atra*), Kaempfer's Tody-tyrant (*Hemitriccus kaempferi*) and the Rufous-vented Ground-cuckoo (*Neomorphus geoffroyi dulcis*) were all listed as endangered throughout their ranges as a result of this rulemaking. The six species named above are not listed under any CITES Appendix, therefore the development of recovery criteria by the FWS could help conservation efforts. In contrast, the Margaretta's Hermit Hummingbird (*Phaethornis malaris margaretae*) is protected under Appendix II, and therefore a recovery outline may not be as useful to develop given the species' international management under the CITES treaty framework.).

¹³⁶ Recovery planning for the Northern Spotted Owl began in 2005 and the final recovery plan was published in 2008. A revised recovery plan was not published until 2011, resulting in a total of six years to complete the recovery planning process due to political interference. See U.S. Dept. of Interior Inspector General. 2008. *Report of Investigation: The Endangered Species Act and the Conflict between Science and Policy* at 24; See also, *Designation of Revised Critical Habitat for the Northern Spotted Owl*, 77 Fed. Reg. 71,875 (Dec.4, 2012).



decade-long process to revise a planning document does not represent best practice, and indeed could be detrimental to the conservation of the Mexican wolf given the institutional inertia that might arise in a situation where there is no plan to guide recovery efforts.¹³⁷

The regulations proposed here attempt to strike a balance between the statutory omission of deadlines to develop a recovery plan and the need to develop a recovery plan promptly once that process has begun. Under SCB's approach, whether or not the Services elect to constitute an external recovery team to develop or revise a recovery plan, a draft plan shall be completed within two years of the commencement of this process. Following a standard period of public comment, a final recovery plan shall be completed within nine months following the close of the public comment period. In total, the recovery planning process should take between three and four years to complete for a species. In addition, SCB's regulations provide an incentive and a safeguard for a recovery team to complete the recovery planning process promptly by requiring the Service to disband a recovery team if it cannot complete a draft recovery plan within two months. Unfortunately, such a mechanism appears to be necessary given the possibility that some stakeholders in the recovery planning process could use the process as a vehicle to stall recovery planning efforts. In addition, the requirement to conduct outside peer review of the draft recovery plan will ensure that the recovery goals and downlisting/delisting criteria are scientifically credible. Requiring the Services to post the content of the peer review comments online allows the public to understand the perceived deficiencies in the draft recovery plan documents.

Finally, as discussed in greater detail below, five-year status reviews are likely to become more important in the recovery planning process given recent court decisions. As a result, it is necessary to improve the regulatory mechanisms that guide the status review process to ensure that recovery efforts are conducted in an integrated manner throughout all major aspects of ESA implementation. Regulatory language already exists in 50 C.F.R. § 424.21, which requires the Services to conduct a status review of each species at least once every five years. SCB's language mirrors in part this regulatory language, but also specifically directs the Services to solicit information from the public regarding recovery planning and critical habitat as part of the status review notice. The proposed regulation also requires that a status review be completed in an 18 month period such that the Services are not perpetually reviewing each listed species.

E. Five Year Status Reviews Must Function as a Tool to Inform Recovery Planning and Section 7 Consultations, and the Decision to Downlist or Delist a Species.

Conservation is most effective and efficient when conservation interventions are regularly assessed in context of a species' conservation status. This is the principle that underlies adaptive management. The ESA requires the Services to conduct a status review of each threatened or endangered species every five years.¹³⁸ This status review must be based on the best scientific and commercial data available, and its purpose is to ascertain whether a species should be delisted or reclassified from threatened to endangered, or vice-versa. Unfortunately, status reviews rarely, if ever occur. In fact, the overwhelming majority of status reviews conducted by the FWS were in response

¹³⁷ Black, S.A., J.J. Groombridge, C.G. Jones. 2011. *Leadership and conservation effectiveness: finding a better way to lead*, Conservation Letters 4:329-339.

¹³⁸ 16 U.S.C. § 1533(c)(2)



to litigation forcing the agency to conduct them.¹³⁹ If status reviews rarely occur, then the Services will not be prompted to adjust the conservation status of a species from threatened to endangered, or vice-versa, without receiving a petition from an interested party. Status reviews provide an opportunity to review the relevance, accuracy, and progress of recovery planning and implementation. And, status reviews could provide the opportunity to gauge whether other parts of the ESA are furthering the larger goal of recovery for a species, including the Section 7 consultation provision and the Section 10 incidental take provision. SCB hopes that timely, meaningful status reviews are conducted for all species. The regulatory language recommended below is designed to integrate status reviews and recovery planning with the other key provisions of the ESA.

1. SCB Recommends the Following Regulatory Language for Recovery Plan Revisions and Species Periodic Reviews:

- (a) *General.* At least once every 5 years, the Secretary shall conduct a review of each listed species to determine whether it should be delisted or reclassified. Each such determination shall be made in accordance with 50 CFR 424.11, 424.16, and 424.17 and part 425 of this Title. A notice announcing those species under active review will be published in the FEDERAL REGISTER. Notwithstanding this section's provisions, the Secretary may review the status of any species at any time based upon a petition (see 50 CFR§ 424.14) or upon other data available to the Service.
- (b) *Recovery Outline and Recovery Plan.* For those threatened and endangered species that do not have an approved recovery outline or recovery plan, the status review shall assess whether a recovery outline or recovery plan should be developed in the next five year period. Where the status review concludes that the development of a recovery outline or recovery plan is not warranted at that time, the status review shall explain why the development of a recovery outline or recovery plan will not promote the conservation of the species.
- (c) *Recovery Outline and Recovery Plan Review.* For those threatened and endangered species that have approved recovery outlines or recovery plans, the status review shall contain the following:
 - (1) A discussion of the recovery tasks that have been implemented since the previous status review of the species, the costs of implementing those recovery tasks, and where practicable, an evaluation of the effectiveness of those recovery tasks.
 - (2) A review of the downlisting criteria and delisting criteria contained in the recovery plan or recovery outline for the species, and where applicable, recommended changes to those criteria in light of additional scientific or commercial data or other scientific information indicating that any criteria should be updated.
 - (3) A review of the recovery goal in the recovery plan or recovery outline for the species, and where applicable, recommended changes to those recovery goals in light of additional scientific or commercial data or other scientific information indicating that any downlisting or delisting criteria should be updated.

¹³⁹ See, e.g., *Florida Home Builders v. Norton*, 496 F.Supp.2d 1330 (M.D. Fl. 2007) (compelling the FWS to review the status of 89 listed species in the southeast United States).



- (d) *Critical Habitat*. The status review shall summarize the habitat requirements of the species, and where applicable, make recommendations on additions or deletions to the designated critical habitat for such species.
- (e) *Take under Section 7*. The status review shall summarize all take authorized by Section 7 of the Act since the previous status review for such species. The status review shall evaluate whether current levels of take jeopardize the continued existence of the species.

2. Explanation of Proposed Regulations:

The ESA is very clear that for those species which have a formal recovery plan, the recovery criteria in that plan must be met in order to delist a species. Delisting must be based on the best available science, and recovery criteria are designed to provide the objective standards against which a species' conservation status should be judged. As the text of the ESA states, the Services shall, when developing recovery plans, include "objective, measurable which, *when met*, would result in a determination, in accordance with the provisions of this section, that the *species be removed* from the list."¹⁴⁰ If the Services could chose to delist a species prior to that species meeting the requirements of its recovery plan, then recovery planning becomes nothing more than an exercise in paperwork.

Unfortunately, in a recent court decision, the D.C. Circuit Court of Appeals held that the Services can delist a species even if the recovery criteria within an approved recovery plan are not met.¹⁴¹ In *Friends of Blackwater*, the FWS proposed to delist the West Virginia Northern Flying Squirrel (*Glaucomys sabrinus fuscus*) ("flying squirrel") even though few of the recovery criteria in the squirrel's recovery plan had been met. The flying squirrel was listed as endangered in 1985,¹⁴² and a recovery plan was completed in 1990.¹⁴³ Despite being on the list of endangered species since 1985, the first status review for the flying squirrel was not conducted until 2006. The status review concluded:

the species is persisting throughout its historic range, with areas of known occupancy occurring much more widespread than at the time of listing. Habitat loss is localized, and a substantial amount of habitat is now considered secure and improving in quality. Therefore, based on this 5-year review, it is evident that *G.s. fuscus* does not meet the definition of endangered or threatened.¹⁴⁴

Thee status review of the flying squirrel demonstrated that the existing recovery criteria in the 1990 plan warranted revision. And, Section 4(f)(4) of the ESA contemplates a process to revise recovery plans and their accompanying recovery criteria that involves public participation. However, instead of following Section 4(f)(4) of the ESA, and soliciting public comment in a transparent process to revise the recovery plan for the squirrel, instead, the FWS revised two of the

¹⁴⁰ 16 U.S.C. § 1533(f)(1)(B)(ii).

¹⁴¹ *Friends of Blackwater v. Salazar*, No. 1:09-cv-02122, slip op at 2 (D.C. Cir. Aug. 17, 2012).

¹⁴² *Determination of Endangered Status for 2 Kinds of Northern Flying Squirrel*, 50 Fed. Reg. 26,999 (July 1, 1985).

¹⁴³ Appalachian Northern Flying Squirrels (*Glaucomys sabrinus fuscus*) & (*Glaucomys sabrinus coloratus*) Recovery Plan. Available at: http://ecos.fws.gov/docs/recovery_plan/900924c.pdf

¹⁴⁴ USFWS West Virginia Field Office. 2006. West Virginia Northern Flying Squirrel (*Glaucomys sabrinus fuscus*) 5-Year Review: Summary and Evaluation.



four criteria in the Squirrel’s recovery plan in an “unpublished, publically-unavailable analysis.”¹⁴⁵ This analysis concluded that two of the recovery plan’s criteria had been met, and the “intent” of the remaining two criteria had also been met, making a revision of the recovery plan unnecessary. As the dissent noted in *Friends of the Blackwater*, the FWS revised the recovery criterion such that flying squirrel habitat in the geographic recovery area “be managed in perpetuity” for the conservation of the flying squirrel. Unfortunately, the majority in *Friends of the Blackwater* held that the FWS’s actions did not violate the ESA. As a result, there is now almost no incentive for the Services to comply in the future with the requirement that the public be involved in the recovery plan revision process. And, if the FWS can modify recovery criteria as it sees fit or even ignore recovery planning criteria completely, then the entire recovery planning process could simply become a paperwork exercise. That in turn would remove most of the incentive for experts to volunteer their services on recovery teams, further reducing the effectiveness of recovery planning and the implementation of the ESA itself.

As a result of this decision, the five-year status review will now become the primary document in the recovery planning process for threatened and endangered species. SCB believes this decision will have a negative impact on the recovery of listed species. To limit the potential harms stemming from this decision, SCB recommends that the Services commit to conducting timely and thorough reviews of each threatened and endangered species every five years. And, SCB recommends the following improvements to the status review process to make it as meaningful as possible, not simply another boilerplate document that fails to advance the goal of recovery of threatened and endangered species.

3. Status Reviews Must Assess the Need to Develop or Update a Recovery Plan for the Species.

There is a general correlation between the existence of a recovery plan and an improving status for listed species.¹⁴⁶ Most listed species already have approved recovery plans, but a small proportion still does not have a recovery plan in place.¹⁴⁷ SCB’s proposed regulations would require the Services to evaluate during the five-year status review whether recovery planning for a listed species should commence in the next five-year period. As the Recovery Guidance notes, there may be rare situations where the development of a recovery plan or outline is not in the conservation interest of the species. In these situations, the Services should explain why this is the case. In other situations where resource limitations are the main factor limiting the development of a recovery plan or outline, the Services should discuss how their decision not to begin recovery planning fits within their existing prioritization guidance on allocating resources throughout the recovery planning program.

¹⁴⁵ *Friends of Blackwater v. Salazar*, slip op at 11; U.S. Fish & Wildlife Service, Analysis of Recovery Plan Criteria for the West Virginia Northern Flying Squirrel (Dec. 18, 2007).

¹⁴⁶ Taylor, M.F., K.F. Suckling, J.J. Rachlinski. 2005. *The Effectiveness of the Endangered Species Act: A Quantitative Analysis*, *BioScience* 55:360-367.

¹⁴⁷ Neel, M.C., et al. 2012. *By the Numbers: How is Recovery Defined by the US Endangered Species Act?* *BioScience* 62: 646-657.



Given the recent decision in *Friends of the Blackwater*, which allows the Service to bypass the stated downlisting or delisting criteria in recovery planning and move directly to downlisting or delisting of a species, it is more important than ever that each status review for a listed species also thoroughly evaluate the need to update the recovery plan for that species. Where a recovery outline needs to be revised, the Services should begin this process promptly because recovery outlines can be completed entirely within the Services internal recovery program. SCB's proposed regulatory requirements would not allow the Services to alter an existing recovery plan via a status review, this must be done following the procedures of Section 4(f) of the ESA. Rather, it would provide notice to the public as to where an existing recovery plan no longer contains the best available science regarding the recovery of the species. Thus, even if the recovery plan has not been updated, the public will have an opportunity to provide comments on the Services' assessment as to whether a species should be either downlisted or delisted based on new information.

4. Status Reviews Must Assess Recovery Tasks Completed in the Previous Five Year Period.

As noted above, conservation is most effective and efficient when conservation interventions are regularly assessed in context of a species' conservation status. The five year status review could potentially serve as a powerful mechanism to assess the effectiveness of recovery actions for a given listed species. Currently, there is no standardized mechanism wherein the Services assess recovery efforts for listed species. SCB believes that this regulation captures the basic principles of adaptive management, and would be a relatively straightforward mechanism for assessing the effectiveness of recovery interventions. The status review could then provide the public with notice as to potential changes in the current recovery strategy for a given species.

5. Status Reviews Should Assess the Conservation Status of the Species, and Provide Recommendations for Revised Recovery Goals, Downlisting Criteria, or Delisting Criteria Where Appropriate.

As discussed above in Section II.A.3, SCB believes that the recovery program will be more effective, more transparent, and more scientifically defensible if the Services consistently adopt a step-down approach to recovery, wherein a species status as endangered or threatened actually reflect its current conservation status on the ground. If a status review indicates that a species should be uplisted from threatened or endangered, then the Services should move to uplist that species promptly. Likewise, if a species' status review indicates that a species should be downlisted from endangered to threatened status, the Services should move to downlist that species just as quickly. If a status review indicates that a species should be uplisted to endangered, or if the status review indicates that an endangered species has declined even further towards extinction, then this would suggest that changes need to be made to the recovery strategy for that species. Similarly, an indicating that a species should be downlisted may indicate that recovery planning is working and that the recovery strategy should remain unchained.

There may be rare occasions during the status review that new scientific data indicate that the downlisting or delisting criteria for a species should be modified. If this information becomes available, then ideally, the Services should go through the recovery revision process to update those



criteria. Unfortunately, the decision in *Friends of the Blackwater* allows the Services to skip this step and move directly to downlisting or delisting a species. What is most problematic about this decision, was that in the case of the northern flying squirrel, the FWS failed to conduct any status reviews for the species between 1985 and 2006. Had the FWS conducted the required five year status reviews, perhaps in 1991, 1996, or 2001, the FWS might have become aware sooner that changes to the recovery plan were warranted, and gone through the process of revising the recovery plan in light of newer data on the flying squirrel. Regulations requiring the Services to review downlisting and delisting criteria as part of each status review do not solve the particular problem of completing non-discretionary duties on time, but it would lead to greater transparency in their decision-making if they elect to complete these duties as the ESA contemplates.

6. Status Reviews Should Assess Listed Species' Critical Habitat Designations and Take Under Section 7.

As noted above, take of listed species as well as the loss and degradation of habitat remain the two top drivers of extinction.¹⁴⁸ And unfortunately, the Services continue to lack a consistent mechanism for tracking take of listed species as well as the adverse modification/destruction of critical habitat authorized through Section 7. Given the decision in *Friends of the Blackwater* and the increased importance of the five year status review, SCB recommends that the status review be used as the mechanism to assess the impacts of Section 7 consultations on the recovery of listed species, as well as the effectiveness of designated critical habitat for the recovery of listed species.

First, SCB recommends that the status review provide an accounting of the take authorized since the completion of the previous status review via the Section 7 process. Such reviews would go a long way towards addressing the GAO report that concluded the Services do not have a means of tracking cumulative take of listed species. Such an accounting of take is necessary because it would provide a feedback mechanism for future consultations relating to the species. For example, if a status review concludes that a species conservation status has declined, then this could provide an indication that the amount of authorized take via the Section 7 process is too high to ensure the species survival or recovery. Conducting an assessment via the status review would help integrate the consultation component of the Services' endangered species programs with their respective recovery offices to a much greater degree.

Second, the result of the status review may indicate that a species requires designated critical habitat or additional critical habitat to move it towards recovery. If the status review indicates that a species' conservation status has declined, this may indicate that additional critical habitat is warranted. It is also possible that a status review could indicate that some areas of critical habitat were designated in error, or no longer meet the statutory definition of critical habitat. For this reason, SCB proposed regulation makes mandatory a review of a species' critical habitat requirements during the status review process.

Finally, as noted by Department of Interior Inspector General in its 2008 report, in most cases, the decisions to change the status of a species from endangered to threatened to recovered,

¹⁴⁸ Wilcove, D.S., et al. 1998. *Quantifying threats to imperiled species in the United States: Assessing the relative importance of habitat destruction, alien species, pollution, overexploitation, and disease*. *BioScience* 48(8):607-615.



the decisions to designate critical habitat, and even the decision to develop a recovery plan are primarily guided in response to litigation. One of benefits of adopting the proposed regulations for status reviews would likely be that the Services could take back control of the listing and recovery process away from ad hoc litigation. Establishing a regular and periodic review of these aspects of the endangered species program for each listed species would provide more transparency to the public regarding the decisions of the Services, and would likely allow the Services to better prioritize their management actions based on the biological needs of threatened and endangered species.

F. Post-Recovery Monitoring and Use of the Services' Emergency Listing Authority.

Since 1973, the Services have possessed the authority to address any “emergency posing a significant risk to the well-being of any species of fish or wildlife.”¹⁴⁹ This emergency authority allows the Services to publish emergency rules, without the required public notice and comment period, to list any species as threatened or endangered, thereby granting such species immediate protection under the ESA. When Congress amended the ESA in 1988 to address recovery planning, it linked the Services' duty to monitor recovered species with the emergency listing authority. These regulations address how the Services should use their emergency authority in the event a recovered species again begins to decline.

1. SCB Recommends the Following Regulatory Language for *Recovery Monitoring and Emergency Listings*.

- (a) **Post-delisting Monitoring Plan.** At the time of delisting, the Secretary shall provide for public review and comment, a plan to monitor a recovered species for a period of not less than five year. Post-delisting monitoring shall extend beyond the five year period where the best available scientific and commercial data indicate that such monitoring is warranted. The plan shall discuss how the Secretary will cooperate with the affected States in monitoring such species post-delisting, and any financial or other assurances that are required to ensure that required monitoring occurs. The plan shall contain re-listing triggers that, when met, may warrant the use of the Secretary's emergency authority to protect any recovered species.
- (b) **Annual Reporting.** As a requirement of the post-delisting monitoring plan, the Secretary shall require periodic reporting on the status of any recovered species, based on the most-current census information regarding such species. Such information shall be made available online for public review within a reasonable time after receipt of such information from the State or States responsible for such species post-delisting.
- (c) **Re-listing Triggers.** Each post-delisting monitoring plan shall include numerical targets and narrative, qualitative criteria addressing each of the five statutory listing factors contained in Section 4(a)(1) of the Act, which if met, could indicate the need to re-list a recovered species. Relisting triggers may be more protective than the levels set forth in the delisting criteria for such species, but in no case may be less protective than the delisting criteria set forth in the most current recovery plan or recovery outline. The Secretary shall, at the end of each year, review the most current data and determine if the recovered species'

¹⁴⁹ 16 U.S.C. § 1533(b)(7).



conservation status has declined below the level set forth by the re-listing triggers. When a species' conservation status has fallen below the level set forth by the re-listing triggers, the Secretary shall notify the affected State or States where the species' conservation status has declined.

- (d) Emergency Listings. When a species' conservation status has fallen below the level set forth by the re-listing triggers, the Secretary may immediately utilize the emergency listing authority in Section 4(b)(7). When a species' conservation status remains below the levels set forth by the re-listing triggers for two consecutive years, the Secretary shall utilize the emergency listing authority in Section 4(b)(7) to prevent a significant risk to the well being of any such recovered species in order to comply with Section (4)(g)(2) of the Act.
- (e) The Secretary shall, at the end of any subsequent period of time identified in the post-delisting monitoring plan, evaluate whether the species' conservation status has fallen below the level specified by the re-listing triggers following the same procedures in subsection (b) and (c) of this section.
- (f) Upon a finding under subsection (c), (d), or (e) that a recovered species has fallen below the re-listing triggers specified in the post-delisting monitoring plan, notwithstanding 50 CFR Sections 424.16, 424.17, 424.18, and 424.19, the Secretary shall, within 90 days, utilize its authority under Section 4(b)(7) of the Act, and publish an emergency rule designating such species as a threatened and re-institute any previously designated critical habitat that had been finalized for such species. Such rules shall take effect immediately on publication in the FEDERAL REGISTER. In the case of an emergency relisting action that applies to a resident species, the Secretary shall give actual notice of such regulation to the State agency in each State in which such species is believed to occur. Upon publication of the emergency rule, the Secretary shall immediately commence the process under the procedures described in 50 C.F.R. 424.16, 424.17, 424.18, and 424.19 (as appropriate) to make permanent the emergency rule.
- (g) An emergency rule made pursuant to subsection (f) shall cease to have force and effect after 240 days publication unless the procedures described in 50 CFR Sections 424.16, 424.17, 424.18, and 424.19 (as appropriate) are been complied with.

2. Explanation of Proposed Regulations.

As part of the recovery-related amendments to the ESA, Congress required the Services to monitor the status of any recovered for at least 5 years post-delisting. The length of time that the Services have conducted post-delisting monitoring (PDM) has varied, and is not consistent between taxa. In some cases, PDM has been quite comprehensive. For example, the Peregrine Falcon was delisted in 1999, and post-delisting monitoring is still ongoing. In that plan, Peregrine Falcons were to be surveyed at three year intervals for fifteen years, ending in 2015. However, most PDM only require the minimum amount of monitoring required by the ESA, not what the species' biological characteristics suggest for an appropriate length of PDM. For example, the monitoring plan proposed for the western Great Lakes DPS of the gray wolf required only five years of monitoring, while the monitoring plan proposed for the northern Rocky Mountains DPS of the gray wolf is ten years.¹⁵⁰ SCB recommends that the length of the post-delisting monitoring time period be based

¹⁵⁰ U.S. Fish and Wildlife Service. 2008. Post-delisting Monitoring Plan for the Western Great Lakes Distinct Population Segment of the Gray Wolf. Available at: <http://www.fws.gov/midwest/wolf/>



primarily on the biological characteristics of the species, including those traits that may have contributed to its listing in the first instance. If a species is long-lived, with a delayed age of breeding onset, post delisting monitoring may need to extend for many years, if not decades, to determine if the species is in renewed danger of becoming threatened or endangered. For example, the Gray Whale was only monitored for five years post-delisting despite being a species in which individual animals can live for decades and do not breed until they are a minimum of eight years old.¹⁵¹ Given this species' life history characteristics, five years may be insufficient to detect significant changes in its conservation status. SCB recommends that monitoring plans be based on the species biology to ensure that recovery persists for these species.

The length of monitoring is important because as part of the 1988 amendments to the ESA, Congress tied post-delisting monitoring to the emergency listing provision of the ESA. The ESA requires the Services "to make prompt use" of its emergency listing authority to prevent "a significant risk to the well being" of a recovered species that again begins to decline. But, this emergency authority is only triggered as a result of the findings from post-delisting monitoring. If a formerly listed species were to begin to decline again beyond the required post-delisting monitoring, it is not clear whether the Services would be required to initiate an emergency listing under the ESA. For example, the gray whale was delisted in 1994, when its population reached approximately 22,000 individuals.¹⁵² The population has been post-delisting monitoring period has remained relatively stable since, and the post-delisting monitoring was concluded in 1999. If the gray whale were to again decline, it is unclear whether the NMFS would be required to use its emergency powers to re-list the whale. Thus, it is important that the monitoring period be related to the species' biological characteristics to ensure that recovery persists into the future.

Second, it is critical to make post-delisting monitoring mandatory, and for there to be assurances that there will be sufficient financial resources to complete this work. For example, the PDM plan for the northern flying squirrel states:

Although the Endangered Species Act authorizes expenditure of both recovery funds and section 6 grants to the states to plan and implement PDM, Congress has not allocated nor earmarked any special funds for this purpose. Funding of PDM activities, therefore, represents trade-offs with other competing endangered species conservation needs. Decisions to request or allocate funding for this PDM effort will consider opportunities for cost-sharing and use of other federal funding sources, such as Federal Aid in Fish and Wildlife Restoration Act, State Wildlife Grants, or allocations for other Service management responsibilities.

This type of language does not give confidence that required monitoring will occur, especially given budget constraints within the FWS and State agencies. Therefore, the SCB regulations proposed require the Services to establish legally-binding mechanisms to ensure that PDM actually occurs,

monitoring/pdf/FinalWGLDPSDMPDMPlan.pdf; *see also*, *Removal of the Gray Wolf in Wyoming From the Federal List of Endangered and Threatened Wildlife and Removal of the Wyoming Wolf Population's Status as an Experimental Population*, 77 Fed. Reg. 55,530 (Sept. 10, 2012).

¹⁵¹ *Gray Whale Research and Monitoring*, 64 Fed. Reg. 54,275 (Oct. 6, 1999).

¹⁵² *Id.*



that this monitoring occur annually for at least the first five years, and that the results of such monitoring be made publically available.

Perhaps most importantly, SCB recommends that PDM plans include re-listing triggers that would compel the Services to re-list a recovered species in situations where there is “a significant risk to the well being” a recovered species, as is required by Section 4(g)(2) of the ESA.¹⁵³ Re-listing triggers would include two components, numerical population targets, and threat-based narrative criteria to help define when a species should be re-listed under the ESA. It is important to note that Congress included a separate provision in the ESA which only focuses on potential declines of recovered species. The use of the language “prevent a significant risk to the well being of any such recovered species,” tied to the use of the emergency listing authority, strongly suggests that Congress desired the Services to use a precautionary approach to protect recovered species. Defining re-listing triggers, both in terms of numerical targets and threat-based criteria will help guide State management of recovered species, and avoid situations where populations of recovered species decline significantly post-delisting. SCB’s proposed regulatory language would still provide the Services and the States with some management flexibility, in that the States would have two years to address any post-delisting declines that fall below the re-listing triggers. However, if such declines appear to be more than a short-term population drop, the Services would then be compelled to re-list the species. The regulatory language above also makes clear that the Services shall use this authority whenever post-delisting monitoring (PDM) crosses the re-listing threshold. Requiring non-discretionary language here is important because in other contexts, federal courts concluded found that the Services’ use of the emergency listing authority is unreviewable in the courts.¹⁵⁴

IV. Proposed Language For 50 C.F.R. Part 425—Recovery and Recovery Planning for Endangered and Threatened Species

What follows is a summary of the regulatory language from the petition above as SCB would envision such regulations occurring in the Code of Federal Regulations, contained in a new Part immediately following Part 424—Listing Endangered and Threatened Species and Designating Critical Habitat. Sections 425.01, 425.10, and some definitions in 425.02 are added in this part of the petition for the first time to provide necessary language for a rule-making effort. We believe the regulatory language proposed for these sections to be non-controversial and therefore do not warrant longer discussions above.¹⁵⁵

¹⁵³ 16 U.S.C. § 1533(g)(2).

¹⁵⁴ *Friends of the Wild Swan v. U.S. Fish and Wildlife Service*, 945 F. Supp. 1388 (D. Or. 1996); see also *American Bird Conservancy v. Kempthorne*, No. 06-2641, 2007 WL 2972548 (D.N.J. Oct. 11, 1997).

¹⁵⁵ SCB also notes that technical changes will be needed for existing regulations found at 50 C.F.R. §§ 424.10 and 424.21 to ensure that those provisions are compatible with Part 425.



Part 425—Recovery and Recovery Planning for Endangered and Threatened Species

Subpart A—General Provisions

425.01 Scope and purpose.

425.02 Definitions.

Subpart B—Recovery Planning

425.10 General.

425.11 Recovery Outline.

425.12 Recovery Plan.

425.13 Time Limits and Required Actions.

425.14 Recovery Plan Revisions and Species Periodic Reviews.

425.15 Recovery Monitoring and Emergency Listings.

AUTHORITY: Pub. L. 93–205, 87 Stat. 884; Pub. L. 95–632, 92 Stat. 3751; Pub. L. 96–159, 93 Stat. 1225; Pub. L. 97–304, 96 Stat. 1411 (16 U.S.C. 1531 *et seq.*).

Subpart A—General Provisions

§ 425.01 Scope and purpose.

- (a) Part 425 provides rules for the recovery planning process for species on the Lists of Endangered and Threatened Wildlife and Plants. Minimum requirements for recovery goals, downlisting criteria, and delisting criteria are provided for determining changes in status from endangered to threatened and from threatened to recovered, respectively. Procedures for recovery planning, five year status reviews, and post-delisting monitoring are also established.
- (b) The purpose of these rules is to interpret and implement those portions of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*), that pertain to the downlisting of species from endangered to threatened, the recovery and removal of species from the Lists of Endangered and Threatened Wildlife and Plants, the assessment of the conservation status of threatened and endangered species during the required five year status reviews, and the post-delisting monitoring of recovered species. Section 4(c)(2) requires the Secretary to conduct, at least once every five years, a status review of each threatened or endangered species to determine if the species should be removed from the list of threatened and endangered species, or changed in status from threatened to endangered or endangered to threatened. Section 4(f) requires the Secretary to develop and implement recovery plans for threatened and endangered species, giving priority, without regard to taxonomic classification, to those species most likely to benefit from such plans, particularly those in conflict with economic development. Recovery plans must include (1) site-specific management actions to achieve the recovery plan's goal for the conservation and survival of the species; (2) objective, measurable criteria which, when met, would result in a determination that the species be removed from the list of threatened and endangered species; and (3) estimates of the time required and the cost to carry out those measures



needed to achieve the plan's goal and to achieve intermediate steps toward that goal. Section 4(f) provides the Secretary with the authority to assemble recovery teams, which are not subject to the Federal Advisory Committee Act, in order to assist in the development of a recovery plan. Section 4(f) requires public notice and comment, and ability of the public to review a proposed recovery plan or the revision to any adopted recovery plan. Sections 4(g) requires the Secretary to, in cooperation with the States, monitor all delisted species for a period of not less than five years, and instructs the Secretary to use its emergency listing authority to protect any recovered species where a significant risk to its well being occurs post-delisting.

§ 425.02 Definitions.

- (a) The definitions of terms in 50 CFR 402.02 and 50 CFR 424.02 shall apply to this part 425, except as otherwise stated.
- (b) *Act* means the Endangered Species Act of 1973, as amended, 16 U.S.C. § 1531 *et seq.*
- (c) *Delisting criteria* means objective and measurable quantitative standards or qualitative standards, based on the best scientific and commercial data available that, when achieved:
 - (1) indicate that a species is no longer in danger of becoming endangered within the foreseeable future based on any of the factors in Section 4(a)(1) of the Act, and
 - (2) the species performs its ecological role throughout all significant portions of its range.Delisting criteria shall be achieved prior to the delisting of such species.
- (d) *Downlisting criteria* means objective and measurable quantitative standards, based on the best scientific and commercial data available, under which a species should be reclassified from endangered to threatened status. To the maximum extent practicable, downlisting criteria shall be achieved prior to the reclassification of a species from endangered to threatened status. Downlisting criteria shall insure that
 - (1) the listing factors under Section 4(a)(1) are being substantially abated such that the species no longer qualifies as endangered in each significant portion of its range,
 - (2) the species has sufficient representation, resiliency, and redundancy in each significant portion of its range to no longer qualified as endangered,
 - (3) the risk of extirpation in each significant portion of its range is less than 10% over the next 100 years, and
 - (4) the species' overall risk of extinction is less than 10% over the next 100 years.
- (e) *Ecological role* means the biological functions a species performs that helps to prevent ecosystem degradation or conserves the ecosystems upon which it depends.
- (f) *Multispecies Recovery Plan* means a recovery plan that is used to guide recovery efforts for more than one threatened or endangered species or for an ecosystem upon which more than one threatened or endangered species depends.
- (g) *Range* means:
 - (1) The current extent of occurrence of the species,
 - (2) The species' former extent of occurrence insofar as the species' former range extent still contains biologically suitable habitat or can be feasibly restored, and
 - (3) The projected extent of occurrence which will likely include biologically suitable habitat for the species within the foreseeable future.
- (h) the current extent of occurrence of the species, (2) the species' former extent of occurrence to the extent that within the species' former range biologically suitable habitat for the



species remains extant or can be feasibly restored , and (3) the projected extent of occurrence which will likely include biologically suitable habitat for the species within the foreseeable future.

- (i) *Recovery* means the improvement in the status of a listed species such that—
 - (1) the species' is of sufficient abundance, measured by numbers of individuals, numbers of populations, range extent, and habitat availability, that it possesses the necessary representation, redundancy, and resiliency to ensure the species' long-term persistence, and to ensure that the species continues to perform its ecological role in each significant portion of its range; and
 - (2) the species is no longer at risk of becoming endangered within the foreseeable future in any significant portion of its range due to (A) the present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence.
- (j) *Redundancy* means possessing multiple populations distributed across all significant portions of its range with a margin of safety to withstand catastrophic events.
- (k) *Representation* means the variation found in a species to ensure that its adaptive capabilities across all significant portions of its range are conserved.
- (l) *Resiliency* means the characteristics that allow a species to recover from periodic disturbance.
- (m) *Significant portion of its range* means each portion of a species' historic range that is within a separate and defined ecoregion.

Subpart B—Recovery Planning

425.10 General.

The Secretary may develop a recovery outline, develop a recovery plan, and revise a recovery plan only accordance with the procedures of this part. The Secretary may downlist a species from endangered to threatened, remove a species from the List of Endangered and Threatened Wildlife and Plants, or conduct a status review of a species only in accordance with the procedures of this part and part 424 of this Title.

425.11 Recovery Outline.

- (a) The recovery outline is a succinct and strategic document, based solely on the best available science, used to direct the recovery effort and maintain recovery options for a species or group of species pending the approval of a recovery plan.
- (b) The recovery outline shall present a preliminary conservation strategy that will guide recovery actions in a systematic, cohesive way throughout the species' range until a recovery plan is available.
- (c) For species designated as endangered, the recovery outline shall include downlisting criteria for the species based solely on the best scientific and commercial data available for the species. For species designated as threatened, the recovery outline shall include delisting criteria for the species based solely on the best scientific and commercial data available for the species.



(d) The recovery outline shall contain:

- (1) An assessment of the threats to the species based on the final rulemaking listing such species as threatened or endangered,
- (2) A description of conservation actions that are urgently needed at the time a species is listed,
- (3) A description, and where feasible an assessment of the biological consequences, of Federal agency actions that are anticipated to trigger consultations under Section 7 of the Act, and
- (4) The recovery priority number for the species based on magnitude of threats to the species, the species' recovery potential, and potential conflict with construction or other development projects or other forms of economic activity.

425.12 Recovery Plan.

- (a) *General.* The recovery plan is a comprehensive planning document that shall include (1) a description of such site-specific management actions as may be necessary to achieve the plan's goal for the conservation and survival of the species; (2) objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of this section, that the species be removed from the list; and (3) estimates of the time required and the cost to carry out those measures needed to achieve the plan's goal and to achieve intermediate steps toward that goal.
- (b) *Contents of Recovery Plans.* Recovery plans shall include the following:
 - (1) **Recovery Goal.** The goal of recovery planning is the recovery and delisting of threatened and endangered species. In some situations, recovery and delisting of an endangered species may be impossible or unforeseeable at the present time. Where evidence indicates that recovery is not an appropriate goal for such species, the goal of recovery planning shall be to achieve population stability and the downlisting of such species to threatened status.
 - (2) **Threat Assessment.** All recovery plans shall describe the threats to the species in terms of the five listing factors of Section 4(a)(1) of the Act. This discussion shall include the source or cause of the threats, the geographic scope, severity, and frequency of the threats, and interactions or synergists effects of two or more threats.
 - (3) **Downlisting criteria.** All recovery plans for endangered species shall include downlisting criteria, upon the meeting of which, the species shall be downlisted from endangered to threatened status.
 - (4) **Delisting criteria.** Where sufficient scientific information exists regarding the recovery of an endangered species, including such species' ecological function in an ecosystem, a recovery plan for an endangered species shall including delisting criteria for such species. All recovery plans for threatened species shall include delisting criteria, upon the meeting of which, the species has achieved recovery and should be removed from the List of Threatened and Endangered Species.
 - (5) **Recovery Units.** The Secretary may subdivide recovery goals, downlisting criteria, and delisting criteria into recovery sub-units to facilitate achieving recovery for such species.
 - (6) **Recovery actions and implementation schedule.** The recovery plan shall include a list of specific recovery actions designed to address the threats to the species and achieve the recovery goal for the species, the parties responsible for carrying out such actions, the



estimated duration of such actions, and estimates of the financial costs for implementation of such actions.

- (7) Take under Section 7. To the maximum extent practicable, the recovery plan shall provide parameters, including population viability analysis, identifying levels of acceptable incidental take that will not jeopardize the continued existence of such species.
- (c) *Multispecies Recovery Plan.* A multispecies recovery plan may be developed when a group of similarly situated threatened and endangered species that possess similar habitat and life-history requirements are at risk of extinction due to a common threat or set of threats, and an integrated recovery approach would benefit such species. For each species in a multispecies recovery plan, the Secretary shall identify, to the maximum extent practicable, the same components in subsection (b) of this Section. Where necessary, the Secretary shall develop an addendum to the multispecies recovery plan addressing those species that require additional implementation measures for the recovery of that species.
- (d) *Recovery Team.* Recovery teams shall include scientific experts on the species, for which the recovery plan is being developed. For multi-species recovery plans, the Secretary shall include scientific experts with relevant expertise on a representative group of the species included within the multi-species recovery planning team. Recovery teams may include other stakeholders, including representatives from state, local, and tribal governments, other federal management agencies, and affected stakeholder groups.

425.13 Time Limits and Required Actions.

- (a) Recovery outlines for all species found within the United States, its territorial possessions or the high seas shall be completed within 90 days of a final rule listing a species as threatened or endangered unless the Secretary finds that the development of a recovery outline will not promote the conservation of the species. For species found entirely outside the United States, its territorial possession, and the high seas, the Secretary shall, in cooperation with the U.S. Department of State, complete a recovery outline within 12 months unless the Secretary finds that the development of a recovery outline will not promote the conservation of the species.
- (b) The Secretary shall publish a Notice of Intent when it intends to initiate recovery planning for a threatened or endangered species or revise an existing recovery plan. The Secretary shall announce whether it intends to constitute a recovery team to develop or revise the recovery plan at that time. Where the Secretary decides to complete or revise a recovery plan internally within the agency, it shall produce a draft plan available for public comment within 24 months. The Secretary shall publish a final recovery plan for the species within 9 months following the close of the public comment period. Where the Service decides to constitute a recovery team to develop or revise a recovery plan, it shall do so within 120 days of the publication of the Notice of Intent. The recovery team shall provide a draft recovery plan to the Secretary for public comment within 18 months of the assembly of the recovery team. The Secretary shall publish a final recovery plan for the species within 9 months following the closing of the public comment period for such species. The Secretary may only terminate the development of a recovery plan once it publishes a Notice of Intent to initiate recovery planning for a species upon a finding that the Secretary lacks sufficient funds to complete the recovery planning process or if the species has been delisted during



the intervening time. Where a recovery team is unable to complete a recovery plan within 18 months of assembly of the recovery team, the Secretary shall disband the recovery team and complete the recovery plan internally within an additional 12 months.

- (c) Peer Review. The Secretary shall conduct a peer review of the draft recovery plan during the public comment period and shall make available any peer review comments online upon submission of such comments to the Service.
- (d) The Secretary shall publish a notice in the Federal Register when it intends to initiate a status review for a threatened or endangered species. The status review shall request information regarding any new scientific or commercial information that indicate any of the following actions are warranted:
 - (1) The species should be reclassified or delisted,
 - (2) The recovery plan or recovery outline for the species should be revised, and
 - (3) Critical habitat should be designated or revised for the species.

The status review for a species shall be completed with 18 months of its commencement. The Services shall make the status review available online and at the regional field office where such review was conducted.

425.14 Recovery Plan Revisions and Species Periodic Reviews.

- (a) *General.* At least once every 5 years, the Secretary shall conduct a review of each listed species to determine whether it should be delisted or reclassified. Each such determination shall be made in accordance with 50 CFR 424.11, 424.16, and 424.17 and part 425 of this Title. A notice announcing those species under active review will be published in the FEDERAL REGISTER. Notwithstanding this section's provisions, the Secretary may review the status of any species at any time based upon a petition (see 50 CFR§ 424.14) or upon other data available to the Service.
- (b) *Recovery Outline and Recovery Plan.* For those threatened and endangered species that do not have an approved recovery outline or recovery plan, the status review shall assess whether a recovery outline or recovery plan should be developed in the next five year period. Where the status review concludes that the development of a recovery outline or recovery plan is not warranted at that time, the status review shall explain why the development of a recovery outline or recovery plan will not promote the conservation of the species.
- (c) *Recovery Outline and Recovery Plan Review.* For those threatened and endangered species that have approved recovery outlines or recovery plans, the status review shall contain the following:
 - (1) A discussion of the recovery tasks that have been implemented since the previous status review of the species, the costs of implementing those recovery tasks, and where practicable, an evaluation of the effectiveness of those recovery tasks.
 - (2) A review of the downlisting criteria and recovery criteria contained in the recovery plan or recovery outline for the species, and where applicable, recommended changes to those criteria in light of additional scientific or commercial data or other scientific information indicating that any criteria should be updated.
 - (3) A review of the recovery goal in the recovery plan or recovery outline for the species, and where applicable, recommended changes to those recovery goals in light of



additional scientific or commercial data or other scientific information indicating that any recovery criteria should be updated.

- (d) *Critical Habitat*. The status review shall summarize the habitat requirements of the species, and where applicable, make recommendations on additions or deletions to the designated critical habitat for such species.
- (e) *Take under Section 7*. The status review shall summarize all take authorized by Section 7 of the Act since the previous status review for such species. The status review shall evaluate whether current levels of take jeopardize the continued existence of the species.

425.15 Recovery Monitoring and Emergency Listings.

- (a) *Post-delisting Monitoring Plan*. At the time of delisting, the Secretary shall provide for public review and comment, a plan to monitor a recovered species for a period of not less than five years. Post-delisting monitoring shall extend beyond the five year period where the best available scientific and commercial data indicate that such monitoring is warranted. The plan shall discuss how the Secretary will cooperate with the affected States in monitoring such species post-delisting, and any financial or other assurances that are required to ensure that required monitoring occurs. The plan shall contain re-listing triggers that, when met, may warrant the use of the Secretary's emergency authority to protect any recovered species.
- (b) *Annual Reporting*. As a requirement of the post-delisting monitoring plan, the Secretary shall require periodic reporting on the status of any recovered species, based on the most-current census information regarding such species. Such information shall be made available online for public review within a reasonable time after receipt of such information from the State or States responsible for such species post-delisting.
- (c) *Re-listing Triggers*. Each post-delisting monitoring plan shall include numerical targets and narrative, qualitative criteria addressing each of the five statutory listing factors contained in Section 4(a)(1) of the Act, which if met, could indicate the need to re-list a recovered species. Relisting triggers may be more protective than the levels set forth in the delisting criteria for such species, but in no case may be less protective than the delisting criteria set forth in the most current recovery plan or recovery outline. The Secretary shall, at the end of each year, review the most current data and determine if the recovered species' conservation status has declined below the level set forth by the re-listing triggers. When a species' conservation status has fallen below the level set forth by the re-listing triggers, the Secretary shall notify the affected State or States where the species' conservation status has declined.
- (d) *Emergency Listings*. When a species' conservation status has fallen below the level set forth by the re-listing triggers, the Secretary may immediately utilize the emergency listing authority in Section 4(b)(7). When a species' conservation status remains below the levels set forth by the re-listing triggers for two consecutive years, the Secretary shall utilize the emergency listing authority in Section 4(b)(7) to prevent a significant risk to the well being of any such recovered species in order to comply with Section (4)(g)(2) of the Act.
- (e) The Secretary shall, at the end of any subsequent period of time identified in the post-delisting monitoring plan, evaluate whether the species' conservation status has fallen below the level specified by the re-listing triggers following the same procedures in subsection (b) and (c) of this section.



- (f) Upon a finding under subsection (c), (d), or (e) that a recovered species has fallen below the re-listing triggers specified in the post-delisting monitoring plan, notwithstanding 50 CFR Sections 424.16, 424.17, 424.18, and 424.19, the Secretary shall, within 90 days, utilize its authority under Section 4(b)(7) of the Act, and publish an emergency rule designating such species as a threatened and re-institute any previously designated critical habitat that had been finalized for such species. Such rules shall take effect immediately on publication in the FEDERAL REGISTER. In the case of an emergency relisting action that applies to a resident species, the Secretary shall give actual notice of such regulation to the State agency in each State in which such species is believed to occur. Upon publication of the emergency rule, the Secretary shall immediately commence the process under the procedures described 50 C.F.R. 424.16, 424.17, 424.18, and 424.19 (as appropriate) to make permanent the emergency rule.
- (g) An emergency rule made pursuant to subsection (f) shall cease to have force and effect after 240 days publication unless the procedures described in 50 CFR Sections 424.16, 424.17, 424.18, and 424.19 (as appropriate) are been complied with.

CONCLUSION

Bringing endangered and threatened species to the point at which protection under the ESA is no longer necessary, is one of the central goals of the Act. Recovery planning regulations are the key to ensuring a consistent and transparent process will guide the recovery of protected species into the future. We appreciate your consideration of this petition, and request a response within ninety days of receipt of this petition. Respectfully submitted on behalf of the Society for Conservation Biology, its North America Section, and ourselves as individuals,

Dominick A. DellaSala, Ph.D.
President, North America Section, Society for Conservation Biology

Brett Hartl, J.D.
Policy Fellow, Society for Conservation Biology

John M. Fitzgerald, J.D.
Policy Director, Society for Conservation Biology



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